

TRENDS IN TELEPHONE SERVICE

Industry Analysis Division
Common Carrier Bureau
Federal Communications Commission
July 1998



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TRENDS IN TELEPHONE SERVICE

TABLE OF CONTENTS

INTRODUCTION	1
ACCESS CHARGES	1
Table 1.1 Interstate Per-Line Access Charges	3
Table 1.2 Interstate Per-Minute Access Charges	4
Table 1.3 Interstate Per-Line Access Charges by Carrier	5
Table 1.4 Interstate Per-Minute Access Charges by Carrier	6
CELLULAR TELEPHONE SERVICE	7
Table 2.1 Cellular Telephone Subscribers	8
Table 2.2 Cellular Telephone Service: Survey Results	9
COMPLAINTS	10
Table 3.1 Carriers Served with More Than 50 Complaints in 1997	12
Table 3.2 Local Exchange Carriers Served with More Than 50 Complaints in 1997	13
Table 3.3 Billing Agents Served with More Than 50 Complaints in 1997	13
Table 3.4 Other Companies Served with More Than 50 Complaints in 1997	14
CONSUMER EXPENDITURES	15
Table 4.1 Telephone Service Expenditures	16
EMPLOYMENT	17
Table 5.1 Annual Average Number of Employees in the Telephone Communications Industry	18
Table 5.2 Labor Productivity Index for the Telephone Communications Industry Measured in Output per Hour	19
EQUAL ACCESS	20
Table 6.1 Development of Equal Access	21
Table 6.2 Central Offices Converted to Equal Access	22
INTERNATIONAL TELEPHONE SERVICE	23
Table 7.1 International Service from United States to Foreign Points	24
Table 7.2 International Telephone Service Settlements	24
Table 7.3 International Message Telephone Service for 1996	25
Table 7.4 U.S. Billed Revenues of Facilities-Based and Facilities-Resale Carriers in 1996	26
Table 7.5 Providers of Pure Resale International MTS in 1996	27

LOCAL COMPETITION	28
Table 8.1 New Local Service Competitors	29
Chart 8.1 Fiber Deployed and Growth in Fiber Deployed	31
Table 8.2 Competitor Collocation Arrangements with Incumbent Telephone Companies	33
Table 8.3 Percent of Incumbent Access Lines Served by Facilities at Which Local Service Competitors Have Operational Collocation Arrangements as of December 31, 1997	34
Table 8.4 Competitor Use of Incumbent Company Facilities and Services as of December 31, 1997	36
LONG DISTANCE CARRIERS	37
Table 9.1 Number of Carrier Identification Codes	38
Table 9.2 Number of Long Distance Carriers by State	39
Table 9.3 Alternative Measures of Long Distance Carrier Development	40
LONG DISTANCE MARKET SHARES	41
Table 10.1 Interstate Switched Access Minutes	44
Table 10.2 Presubscribed Telephone Lines by Carrier	46
Table 10.3 Market Share of Presubscribed Lines	49
Table 10.4 Market Share of Presubscribed Telephone Lines by State as of December 31, 1996	50
Table 10.5 Incumbent Local Exchange Carriers' (ILECs) Share of Presubscribed Lines in Their Own Service Areas	51
Table 10.6 Distribution of ILECs by Number of Areas in Which They Provide Both Local and Long Distance Service	51
Table 10.7 Average ILEC Share of Presubscribed Lines in [Their Service Area]	52
Table 10.8 Total Operating Revenues of Long Distance Service Providers	53
Table 10.9 Total Toll Service Revenues - Market Share	55
Table 10.10 Total Toll Service Revenues - Market Share	56
Chart 10.1 Indicators of AT&T Market Share	58
MINUTES OF CALLING	59
Table 11.1 Dial Equipment Minutes	61
Table 11.2 Line Usage per Day	62
Table 11.3 Interstate Switched Access Minutes	63
PRICE INDEXES FOR TELEPHONE SERVICES	64
Table 12.1 Long-Term Changes for Various Price Indexes	66
Table 12.2 Annual Changes in Major Price Indexes	67
Table 12.3 Annual Changes in Price Indexes for Local and Long Distance Telephone Services	68

PRICE LEVELS	69
Table 13.1 Average Residential Rates For Local Service In Urban Areas	71
Table 13.2 Average Local Rates for Businesses with a Single Line in Urban Areas	72
Table 13.3 Average Monthly Local Rates of RUS Borrowers	72
Table 13.4 Changes in the Price of Directly Dialed Five-Minute Long Distance Calls	73
Table 13.5 Average Revenue per Minute	74
RATE OF RETURN	75
Table 14.1 Interstate Rate of Return Summary	76
RESIDENTIAL TELEPHONE USAGE:	79
Table 15.1 Distribution of Residential Toll Calls and Minutes	80
Table 15.2 Average Residential Monthly Toll Calling: 1997	80
Table 15.3 Duration of Residential Long Distance Calls	81
Table 15.4 Distance of Residential Long Distance Calls in 1997	82
Table 15.5 Duration of Residential Long Distance Calls by Distance in 1997	82
Table 15.6 Distribution of Residential Long Distance Minutes by Day of Week in 1997	83
SUBSCRIBERSHIP	84
Table 16.1 Household Telephone Subscribership in the United States	85
Table 16.2 Telephone Penetration by State	86
Table 16.3 Historical Telephone Penetration Estimates	87
Table 16.4 Comparison of Penetration Rates for States with and without Lifeline Programs	87
TECHNOLOGY DEVELOPMENT	88
Table 17.1 Central Offices and Access Lines by Technology	89
Table 17.2 Features Available in Central Offices	90
Table 17.3 Local Transmission Technology	91
TELECOMMUNICATIONS INDUSTRY REVENUES	92
Table 18.1 Telecommunications Revenue Reported by Type of Service	93
Table 18.2 Number of Carriers Paying into the Telecommunications Relay Service Fund by Type of Carrier	94
Table 18.3 Gross Revenue Reported by Type of Carrier	94
Table 18.4 Industry Telephone Revenue by State for 1995 and 1996	95
TELEPHONE LINES	96
Table 19.1 Total U.S. Telephone Lines	97
Table 19.2 Telephone Lines by State	98

Table 19.3 Additional Residential Lines for Households with Telephone Service	99
TELEPHONE NUMBERS	100
Table 20.1 Area Codes Assignments	101
Table 20.2 Telephone Numbers Assigned for 800 Service	104
Table 20.3 Telephone Numbers Assigned for 888 Service	106
Table 20.4 Telephone Numbers Assigned for 877 Service	107
APPENDIX	108

INTRODUCTION:

Trends in Telephone Service is published by the Industry Analysis Division of the Common Carrier Bureau of the Federal Communications Commission (FCC). We have designed this report to provide answers to some of the most frequently asked questions about the telephone industry -- questions asked by consumers, members of Congress, other government agencies, telecommunications carriers, and members of the business and academic communities. To this end, the report contains summary information about the size, growth, and development of the telephone industry, including data on market shares, minutes of calling, number of lines, and telephone subscribership. The report also provides information about telephone rates and price changes, consumer expenditures for service, access charges, long distance carriers, infrastructure, universal service programs, and international telephone traffic.

Trends in Telephone Service summarizes a variety of information contained in other reports that are published periodically by the Industry Analysis Division. In most cases, these other reports give much more detailed information than that provided here. These reports can be accessed from our internet site, as indicated in the appendix to this report. In addition, to facilitate further information gathering by consumers and others, we have listed additional sources of information in the appendix.

ACCESS CHARGES:

Long distance companies rely on the loops, switches, and transport facilities of local telephone companies for access to their customers. As a result, local telephone companies recover a portion of their costs from long distance companies accessing their networks. Both the manner in which these access charges have been assessed and the proportion of the costs they have recovered have varied considerably over time.

In the early 1980s, AT&T provided about three-quarters of the nation's local telephone service and almost all interstate long distance service. Because revenue sharing was largely an internal process for AT&T, it was able to charge prices above cost for long distance calls and share the revenues with local telephone companies. These transfers, while reducing the pressures on the local companies to raise monthly rates, contributed to inefficiently high long distance rates. The high rates were responsible for suppressing demand for long distance calls and inducing large corporations to bypass the public switched network. Moreover, while such revenue sharing arrangements were sustainable in an industry where one firm monopolized both long distance and local service, they were not compatible with a competitive long distance industry.

In mid-1984 the FCC, in cooperation with a Federal-State Joint Board composed of both federal and state regulators, introduced sweeping changes to the way that interstate telephone services were priced. The historic method of sharing revenues was replaced with a new system of access charges that provided a uniform method for local telephone companies to charge

for the origination and termination of interstate traffic on their local networks. In particular, monthly subscriber line charges (SLCs) were introduced to recover a portion of the fixed costs of the local telephone companies loops directly from end users on a per-line basis. Since local telephone companies were required to reduce their charges to long distance carriers -- dollar for dollar -- as SLCs were introduced, they reduced the implicit subsidy from long distance use to local service. The rebalancing of prices between local service and interstate long distance calls during the 1980s had a fundamental impact on the telephone industry as the price of long distance service fell and the volume of long distance calling surged.

In mid-1997, as part of its implementation of the 1996 Telecommunications Act, the FCC introduced further interstate access charge reform. Presubscribed interexchange carrier charges (PICCs) were created in order to allow local carriers to recover the remaining portion of their fixed loop costs from long distance carriers on a per-line, instead of a per-minute, basis. Flat cost recovery on a per-line basis not only eliminates the remaining inefficiency in the pricing of long distance access, but allows local companies to recover costs in a competitively neutral manner, consistent with the goals of the 1996 Act.

Average monthly SLCs and PICCs are shown in Table 1.1, and average per-minute rates charged to long distance carriers are shown in Table 1.2. Both tables report historical averages for all local exchange carriers (LECs) that file access tariffs subject to price-cap regulation and LECs in the National Exchange Carrier Association (NECA) pool. These LECs control over 98% of the industry's regulated access lines. Current per-line charges and per-minute charges are reported for each of the carriers in Tables 1.3 and 1.4, respectively.

The average in Table 1.2 clearly illustrates the effectiveness of access reform in reducing the prices long distance carriers pay per minute for access to the local telephone companies' networks. Per-minute access prices have continually decreased over time, a trend that continues with implementation of the 1997 reforms.

TABLE 1.1

INTERSTATE PER-LINE ACCESS CHARGES
(NATIONAL AVERAGE PER MONTH PER LINE) *

Rates in Effect		Charged to End Users ** (Subscriber Line Charges)			Charged to Long Distance Carriers *** (Presubscribed Interexchange Carrier Charges)			
From	To	Residential and Single-Line Business	Non-Primary Residential	Multiline Business and Centrex	Residential and Single-Line Business	Non-Primary Residential	Multiline Business	Centrex
05/26/84	05/31/85	\$0.00		\$4.99				
06/01/85	09/30/85	1.00		4.99				
10/01/85	05/31/86	1.00		4.97				
06/01/86	12/31/86	2.00		4.97				
01/01/87	06/30/87	2.00		5.12				
07/01/87	12/31/87	2.60		5.12				
01/01/88	11/30/88	2.60		5.01				
12/01/88	03/31/89	3.20		5.01				
04/01/89	12/31/89	3.50		4.94				
01/01/90	06/30/90	3.48		4.84				
07/01/90	12/31/90	3.48		4.83				
01/01/91	06/30/91	3.48		4.77				
07/01/91	11/27/91	3.49		4.74				
11/28/91	06/30/92	3.49		4.76				
07/01/92	06/30/93	3.49		4.68				
07/01/93	06/30/94	3.50		5.37				
07/01/94	06/30/95	3.50		5.45				
07/01/95	06/30/96	3.50		5.50				
07/01/96	06/30/97	3.50		5.53				
07/01/97	12/31/97	3.50		5.68				
01/01/98	06/30/98	3.50	4.98	6.92	0.49	1.50	2.52	0.35
07/01/98	12/31/98	3.50	4.99	7.11	0.49	1.38	2.38	0.38

SOURCE: FEDERAL-STATE JOINT BOARD MONITORING REPORT, MAY 1997, AND ANNUAL FILINGS MADE EFFECTIVE JULY 1, 1997, JANUARY 1, 1998, AND JULY 1, 1998.

* This table shows average rates (weighted by access lines) for all local exchange carriers (LECs) that file access tariffs subject to price-cap regulation and all LECs in the National Exchange Carrier Association (NECA) pool.

** Prior to 01/01/98 carriers did not charge separate subscriber line charge (SLC) rates for primary and non-primary residential lines. Therefore, the residential and single-line business average SLCs reported prior to 01/01/98 include all residential SLC charges. The average residential and single-line business SLC rate for 01/01/98 now excludes non-primary residential SLC charges. Non-primary SLC charges are now reported separately, except for the LECs in the NECA pool, which continue to charge a single residential SLC. Under price-cap regulation the caps on SLCs for primary residential and single-line business, non-primary residential, and multiline business and Centrex lines equal \$3.50, \$5.00, and \$9.00, respectively. For NECA pool companies the residential SLC cap is \$3.50, while the multiline business and Centrex SLC cap equals \$6.00.

*** On 01/01/98 price-cap carriers began to charge presubscribed interexchange carrier charges (PICCs). The reported PICCs are averages per line including both price-cap and NECA pool lines. While carriers do not charge different rates for Centrex and multiline business SLCs, they do charge different PICC rates for these lines. Therefore, the average multiline business and Centrex PICC rates are reported separately. However, multiline business line counts, used to compute average PICC rates, include Centrex lines for LECs in the NECA pool, which do not charge PICCs or distinguish in access filings between the two line types. Under price-cap regulation the caps on PICCs for primary residential and single-line business, non-primary residential, and multiline business lines equal \$0.53, \$1.50, and \$2.75, respectively. Centrex PICC caps are determined by level of service.

TABLE 1.2

INTERSTATE PER-MINUTE ACCESS CHARGES
(NATIONAL AVERAGE IN CENTS PER MINUTE) *

Rates in Effect		Interstate Charges for Switched Access Service				
From	To	Carrier Common Line per Originating Access Minute*	Carrier Common Line per Terminating Access Minute*	Traffic Sensitive per Switched Minute	Non-Traffic Sensitive per Switched Minute**	Total Charge per Conversation Minute ***
05/26/84	01/14/85	5.24 ¢	5.24 ¢	3.10 ¢		17.26 ¢
01/15/85	05/31/85	5.43	5.43	3.10		17.66
06/01/85	09/30/85	4.71	4.71	3.10		16.17
10/01/85	05/31/86	4.33	4.33	3.10		15.38
06/01/86	12/31/86	3.04	4.33	3.10		14.00
01/01/87	06/30/87	1.55	4.33	3.10		12.41
07/01/87	12/31/87	0.69	4.33	3.10		11.49
01/01/88	11/30/88	0.00	4.14	3.10		10.56
12/01/88	02/14/89	0.00	3.39	3.00		9.60
02/15/89	03/31/89	0.00	3.25	3.00		9.46
04/01/89	12/31/89	1.00	1.83	3.00		9.11
01/01/90	06/30/90	1.00	1.53	2.50		7.78
07/01/90	12/31/90	1.00	1.23	2.50		7.48
01/01/91	06/30/91	1.00	1.14	2.40		7.18
07/01/91	06/30/92	0.88	1.06	2.40		6.97
07/01/92	06/30/93	0.79	0.95	2.40		6.76
07/01/93	06/30/94	0.88	1.16	2.20		6.66
07/01/94	06/30/95	0.84	1.08	2.10	0.28 ¢	6.89
07/01/95	06/30/96	0.74	0.89	1.96	0.21	6.16
07/01/96	06/30/97	0.72	0.89	1.95	0.17	6.04
07/01/97	12/31/97	0.64	0.84	1.63	0.14	5.18
01/01/98	06/30/98	0.68	0.23	1.29	0.21	4.04
07/01/98	12/31/98	0.91	0.20	0.99	0.30	3.82

SOURCE: FEDERAL-STATE JOINT BOARD MONITORING REPORT, MAY 1997, FILINGS MADE EFFECTIVE JULY 1, 1997, JANUARY 1, 1998, AND JULY 1, 1998, AND ARMIS 43-01 REPORTS FILED AT THE COMMISSION.

* This table shows average rates (weighted by minutes of use) for all local exchange carriers (LECs) that file access tariffs subject to price-cap regulation and all LECs in the National Exchange Carrier Association (NECA) pool. These average rates are calculated differently from those published previously in the TRENDS IN TELEPHONE SERVICE, January 1998. In the January version, the average rates included the average revenue per minute from primary interexchange carrier charges (PICCs). This table no longer includes the PICC charge. Instead, the PICC charge per line is reported in Table 1.1.

** Non-traffic sensitive charges include switching and transport charges that are not assessed per minute, but are assessed on a per-unit or a per-call basis, and do not include primary interexchange carrier charges (PICCs). Prior to 07/01/94 these charges were included in the average traffic sensitive rates.

*** The total charge per conversation minute consists of charges on the originating end of the call, which are adjusted for dialing and call setup time, plus charges on the terminating end. Originating charges per conversation minute equal the carrier common line charge per originating access minute plus the traffic sensitive charge per switched minute, both multiplied by 1.07 to account for dialing and call setup time, plus the non-traffic sensitive charge per switched minute. Terminating charges per conversation minute equal carrier common line charges per terminating access minute plus both traffic sensitive and non-traffic sensitive charges per switched minute.

TABLE 1.3

INTERSTATE PER-LINE ACCESS CHARGES BY CARRIER
(IN DOLLARS PER MONTH PER LINE) *

Company	Rates Effective 7/01/98							1997 Average Monthly Access Lines **** (Thousands)			
	Subscriber Line Charges **			Presubscribed Interexchange Carrier Charges ***							
	Residential and Single-Line Business	Non-Primary Residential	Multiline Business and Centrex	Residential and Single-Line Business	Non-Primary Residential	Multiline Business	Centrex	Residential and Single-Line Business	Non-Primary Residential	Multiline Business	Centrex
Ameritech	\$3.50	\$5.00	\$5.46	\$0.53	\$1.50	\$2.75	\$0.31	11,656	1,662	3,690	2,235
Bell Atlantic	\$3.50	\$4.94	\$6.13	\$0.53	\$1.50	\$2.75	\$0.46	12,122	1,630	4,058	2,534
BellSouth	\$3.50	\$5.00	\$8.14	\$0.53	\$1.50	\$2.75	\$0.30	14,372	1,735	4,595	1,464
NYNEX	\$3.50	\$5.00	\$8.25	\$0.53	\$1.50	\$2.75	\$0.32	11,488	793	3,571	1,441
Pacific Telesis	\$3.50	\$5.00	\$6.14	\$0.53	\$0.55	\$0.57	\$0.41	9,806	1,304	3,436	1,598
SBC	\$3.50	\$5.00	\$7.26	\$0.53	\$1.50	\$2.75	\$0.38	9,704	874	3,586	704
U S WEST	\$3.50	\$5.00	\$8.29	\$0.53	\$1.50	\$2.75	\$0.31	10,156	1,241	3,497	792
GTE	\$3.50	\$5.00	\$8.26	\$0.53	\$1.50	\$2.75	\$0.46	12,733	793	2,912	1,136
Aliant	\$3.50	\$5.00	\$7.19	\$0.53	\$1.50	\$2.75	\$0.85	183	10	43	30
Frontier	\$3.50	\$5.00	\$5.81	\$0.53	\$1.50	\$2.75	\$0.36	693	24	111	97
SNET	\$3.50	\$5.00	\$8.04	\$0.53	\$1.50	\$2.75	\$0.60	1,427	101	282	247
Sprint Local	\$3.50	\$5.00	\$7.48	\$0.53	\$1.50	\$2.69	\$0.36	5,257	345	1,032	440
Citizens	\$3.50	\$5.00	\$9.00	\$0.53	\$1.50	\$2.75	\$0.59	684	15	118	48
Cincinnati Bell	\$3.50	\$5.00	\$5.94	\$0.53	\$1.50	\$2.75	\$0.31	654	51	197	68
All Price Caps	\$3.50	\$4.99	\$7.15	\$0.53	\$1.38	\$2.51	0.38	100,936	10,578	31,129	12,834
NECA	\$3.50	N/A	\$6.00	\$0.00	N/A	\$0.00	N/A	8,190	N/A	1,743	N/A
All Carriers	\$3.50	\$4.99	\$7.11	\$0.49	\$1.38	\$2.38	\$0.38	109,126	10,578	32,871	12,834

SOURCE: ANNUAL FILINGS EFFECTIVE JULY 1, 1998.

* This table shows average rates (weighted by access lines) for all local exchange carriers (LECs) that file access tariffs subject to price-cap regulation and all LECs in the National Exchange Carrier Association (NECA) pool. Rates are composites of all regions and subsidiaries of each local exchange carrier.

** On 01/01/98 carriers began charging separate subscriber line charge (SLC) rates for primary and non-primary residential lines. Therefore, the average residential and single-line business SLC rate now excludes non-primary residential SLC charges. Non-primary SLC charges are now reported separately, except for LECs in the NECA pool, which continue to charge a single residential SLC.

*** On 01/01/98 price-cap carriers began to charge presubscribed interexchange carrier charges (PICCs). While carriers do not charge different rates for Centrex and multiline business SLCs, they do charge different PICC rates for these lines. Therefore, the average multiline business and Centrex PICC rates are reported separately. However, multiline business counts, used to compute average PICC rates, include Centrex lines for LECs in the NECA pool, which do not charge PICCs or distinguish in access filings between the two line types.

**** Access line counts measure lines that companies report as qualified to receive subscriber line charges. ISDN-BRI lines, which are charged non-primary residential SLC and PICC rates, are included in the non-primary residential line counts. ISDN-PRI lines, which are charged rates equal to five times the multiline business SLC and PICC rates, are multiplied by five and added to multiline business counts.

TABLE 1.4

INTERSTATE PER-MINUTE ACCESS CHARGES BY CARRIER
(IN CENTS PER MINUTE) *

Company	Rates Effective 7/01/98				Total Charge per Conversation Minute ***	1997 Minutes of Use (Millions)		
	Carrier Common Line per Originating Access Minute	Carrier Common Line per Terminating Access Minute	Switched Traffic Sensitive per Access Minute	Switched Non-Traffic Sensitive per Access Minute **		CCL Originating	CCL Terminating	Local Switching
Ameritech	0.47 ¢	0.00 ¢	0.77 ¢	0.31 ¢	2.71 ¢	18,700	32,377	50,941
Bell Atlantic	0.80	0.00	0.62	0.17	2.48	23,041	46,847	70,045
BellSouth	1.41	0.03	0.80	0.27	3.74	27,870	45,484	73,846
NYNEX	1.26	0.00	1.44	0.26	4.85	18,536	36,892	56,308
Pacific Telesis	0.03	0.00	0.72	0.36	2.24	12,977	26,034	39,054
SBC	0.00	0.00	0.96	0.29	2.57	15,773	25,814	42,030
U S WEST	0.56	0.00	1.02	0.65	4.01	21,351	34,436	55,908
GTE	2.00	1.15	0.92	0.19	5.57	18,388	29,819	48,834
Aliant	0.06	0.00	1.52	0.32	3.85	258	426	688
Frontier	1.19	0.26	1.29	0.36	4.93	735	1,659	2,396
SNET	0.34	0.00	1.29	0.28	3.60	3,178	5,095	8,276
Sprint Local	1.29	0.61	1.06	0.22	4.62	8,213	12,767	21,110
Citizens	2.64	1.57	1.85	0.42	9.06	1,077	1,431	2,520
Cincinnati Bell	0.55	0.00	0.85	0.17	2.69	1,111	1,799	2,912
All Price Caps	0.91	0.15	0.92	0.30	3.64	171,209	300,879	474,868
NECA	1.00	1.18	3.57	0.08	9.80	11,751	13,622	13,365
All Carriers	0.91 ¢	0.20 ¢	0.99 ¢	0.30 ¢	3.82 ¢	182,960	314,501	488,233

SOURCE: ANNUAL FILINGS MADE EFFECTIVE JULY 1, 1998. CCL MINUTES FOR PACIFIC TELESIS ARE FROM 1997 ARMIS 43-01 REPORTS FILED AT THE COMMISSION.

* This table shows average rates (weighted by minutes of use) for all local exchange carriers (LECs) that file access tariffs subject to price-cap regulation and all LECs in the National Exchange Carrier Association (NECA) pool. Rates are composites of all regions and subsidiaries of each local exchange carrier. These average rates are calculated differently from those published previously in the TRENDS IN TELEPHONE SERVICE, January 1998. In the January version, the average rates included the average revenue per minute from primary interexchange carrier charges (PICCs). This table no longer includes the PICC charge. Instead, the PICC charge per line is reported in Table 1.3.

** Non-traffic sensitive charges include switching and transport charges that are not assessed per minute, but are assessed on a per-unit or a per-call basis, and do not include primary interexchange carrier charges (PICCs).

*** The total charge per conversation minute consists of charges on the originating end of the call, which are adjusted for dialing and call setup time, plus charges on the terminating end. Originating charges per conversation minute equal the carrier common line charge per originating access minute plus the traffic sensitive charge per switched minute, both multiplied by 1.07 to account for dialing and call setup time, plus the non-traffic sensitive charge per switched minute. Terminating charges per conversation minute equal carrier common line charges per terminating access minute plus both the traffic sensitive and non-traffic sensitive charges per switched minute.

CELLULAR TELEPHONE SERVICE:

The Federal Communications Commission licenses cellular telephone companies but does not impose reporting requirements on the cellular industry. The Cellular Telecommunications Industry Association (CTIA) periodically publishes summary information on the industry, a selection of which is shown in Tables 2.1 and 2.2. CTIA can be found on the internet at <http://www.wow-com.com> on the World Wide Web.

The cellular industry has grown dramatically. Table 2.1 shows that there were 92,000 subscribers in 1984, as compared to 55 million as of December 1997. As seen in Table 2.2, the industry's annual revenues rose from less than \$1 billion in 1984 to over \$27 billion in 1997. The table also shows that the industry had over 100,000 employees as of December 1997, as compared to about 1,000 in 1984, and that there was a significant drop in the average monthly bill from \$96.83 at the end of 1987 to \$42.78 at the end of 1997.

TABLE 2.1
CELLULAR TELEPHONE SUBSCRIBERS

		NUMBER OF SYSTEMS	SUBSCRIBERS
1984	DECEMBER	32	91,600
1985	JUNE	65	203,600
	DECEMBER	102	340,213
1986	JUNE	129	500,000
	DECEMBER	166	681,825
1987	JUNE	206	883,778
	DECEMBER	312	1,230,855
1988	JUNE	420	1,608,697
	DECEMBER	517	2,069,441
1989	JUNE	559	2,691,793
	DECEMBER	584	3,508,944
1990	JUNE	592	4,368,686
	DECEMBER	751	5,283,055
1991	JUNE	1,029	6,390,053
	DECEMBER	1,252	7,557,148
1992	JUNE	1,483	8,892,535
	DECEMBER	1,506	11,032,753
1993	JUNE	1,523	13,067,318
	DECEMBER	1,529	16,009,461
1994	JUNE	1,550	19,283,506
	DECEMBER	1,581	24,134,421
1995	JUNE	1,581	28,154,415
	DECEMBER	1,627	33,785,661
1996	JUNE	1,629	38,195,466
	DECEMBER	1,740	44,042,992
1997	JUNE	2,005	48,705,553
	DECEMBER	2,228	55,312,293

SOURCE: CELLULAR TELECOMMUNICATIONS INDUSTRY ASSOCIATION.

TABLE 2.2

CELLULAR TELEPHONE SERVICE: SURVEY RESULTS

		NUMBER OF SYSTEMS RESPONDING	PERCENT OF INDUSTRY SURVEYED	EMPLOYEES	SIX-MONTH REVENUES (THOUSANDS)	AVERAGE MONTHLY BILL
1984	DECEMBER	32	100.0 %	1,404	\$178,085	
1985	JUNE	65	100.0	1,697	176,231	
	DECEMBER	101	100.0	2,727	306,197	
1986	JUNE	122	96.0	3,556	360,585	
	DECEMBER	160	95.3	4,334	462,467	
1987	JUNE	192	88.0	5,656	479,514	
	DECEMBER	297	97.2	7,147	672,005	\$96.83
1988	JUNE	409	99.9	9,154	886,075	95.00
	DECEMBER	496	99.1	11,400	1,073,473	98.02
1989	JUNE	513	99.1	13,719	1,406,463	85.52
	DECEMBER	546	98.8	15,927	1,934,132	89.30
1990	JUNE	554	98.8	18,973	2,126,362	83.94
	DECEMBER	663	98.2	21,382	2,422,458	80.90
1991	JUNE	905	96.4	25,545	2,653,505	74.56
	DECEMBER	1,005	96.5	26,327	3,055,017	72.74
1992	JUNE	1,129	96.3	30,595	3,633,285	68.51
	DECEMBER	1,189	93.4	34,348	4,189,441	68.68
1993	JUNE	1,110	92.2	36,501	4,819,259	67.31
	DECEMBER	1,287	92.3	39,775	6,072,906	61.48
1994	JUNE	1,242	92.7	45,606	6,519,030	58.65
	DECEMBER	1,371	93.2	53,902	7,710,890	56.21
1995	JUNE	1,330	93.9	60,624	8,740,352	52.42
	DECEMBER	1,392	93.0	68,165	10,331,614	51.00
1996	JUNE	1,346	92.2	73,365	11,194,247	48.84
	DECEMBER	1,422	92.4	84,161	12,440,724	47.70
1997	JUNE	1,785	94.9	97,039	13,134,551	43.86
	DECEMBER	2,017	94.9	109,387	14,351,082	42.78

SOURCE: CELLULAR TELECOMMUNICATIONS INDUSTRY ASSOCIATION.

COMPLAINTS:

During 1997, the FCC's Consumer Protection Branch processed 44,000 written complaints and inquiries. Of the 44,000 complaints, 46% involved slamming issues, 10% involved pay-per-call services, and 5% involved operator service provider rates and services. The remaining complaints covered a range of issues including international telephone rates, and unsolicited calls or faxes. Because not all complaints are justified, and because a single complaint may be served on multiple companies, service of a complaint does not always indicate wrongdoing by the company being served with the complaint.

Table 3.1 includes data for 50 companies providing long distance telephone service that were served with more than 50 complaints during 1997. For each of the companies listed a complaint index was calculated by dividing the number of complaints served on that company by the amount of telecommunications-related revenue the carrier reported in its universal service filings. The companies were then listed in order of descending complaint indexes.

The revenue amounts contained in Table 3.1 come from the universal service filings, which are confidential, so these figures can not be reported — nor can the individual company specific complaint indexes be released. The carriers were therefore organized into groups of four or more, in order to maintain confidentiality. A combined complaint index for each group was calculated by dividing the sum of their complaints by the sum of their revenues. The universal service filings were due on March 31, 1998. Not all carriers had filed the form as of that time. Revenue information was used to calculate complaint indexes if the carrier filed its universal service form before May 11, 1998.

Table 3.2 lists the twelve local exchange carriers (LECs) served with more than 50 complaints. When the Consumer Protection Branch serves a slamming complaint, the consumer's LEC is also served because the LEC's records contain essential information for resolving slamming complaints. For this reason, many of the complaints served on LECs are generated because of the activities of long distance carriers serving in their areas. Regional Bell Operating Company revenues are available from the Preliminary Statistics of Communications Common Carriers, released May 29, 1998. Revenues of other LECs were taken from annual reports.

Some companies do not bill their customers directly, but rely on other companies known as "billing agents." Billing agents sub-contract with the LECs to arrange billing and collection for services rendered. Because of the nature of their business, billing agents are not required to make universal service filings. These companies have been listed separately in Table 3.3. Each billing agent listed was contacted to see if it would provide the revenue for which it billed, so a complaint index could be calculated. Three billing agents declined to do so.

Table 3.4 lists the number of complaints served on companies that did not file the Universal Service Worksheet. Because the amount of their long distance revenue is unknown, a complaint index could not be calculated. Some of the companies are not carriers and therefore were not required to file. Some companies were exempted from filing because their revenues were minimal. Others, however, are carriers that are not yet in compliance with the Commission's rules.

TABLE 3.1
LONG DISTANCE CARRIERS SERVED WITH MORE THAN 50 COMPLAINTS IN 1997

Carrier	Complaints Served	Revenue (Millions)	Complaint Index
Pilgrim Telephone, Inc.	263		
Home Owners Long Distance	192		
Axces Telecommunications, Inc.	316		
Group Long Distance, Inc.	<u>298</u>		
Group Totals and Index	1,069	\$43	24.9
Brittan Communications, Inc.	485		
LDM Systems, Inc.	530		
LDC Telecommunications, Inc.	257		
Preferred Carrier Service	<u>148</u>		
Group Totals and Index	1,420	79	17.9
Winstar Gateway Network (Non-LEC Services)	224		
QCC	180		
Network Operator Services	199		
North American Communications	<u>134</u>		
Group Totals and Index	737	61	12.1
Operator Communications, Inc. (Oncor)	494		
EqualNet Corporation	345		
National Telecom, USA	136		
The Furst Group	<u>543</u>		
Group Totals and Index	1,518	167	9.1
Coast International Telecommunications	86		
Atlas Communications	273		
American Network Exchange	435		
Cleartel Communications	<u>129</u>		
Group Totals and Index	923	147	6.3
Operator Services Company	119		
Consumer Access	162		
OPTICOM (One Call Communications, Inc.)	500		
North American Telephone Network	<u>97</u>		
Group Totals and Index	878	202	4.4
Intellicall Operator Services	121		
National Accounts Long Distance, Inc.	156		
Matrix Telecom	115		
Coastal Telephone Company	<u>120</u>		
Group Totals and Index	512	214	2.4
Communication TeleSystems International (Worldxchange)	409		
Touch 1 Long Distance, Inc.	97		
National Telephone & Communications, Inc.	160		
Conquest Operator Services Corp.	<u>55</u>		
Group Totals and Index	721	438	1.6
USLD Communications Corp.	309		
GE Exchange	53		
Midcom Communications, Inc.	60		
Telco Communications Group	<u>370</u>		
Group Totals and Index	792	812	1.0
NOS Communications, Inc.	73		
Frontier Corporation (Non-LEC Services)	752		
IXC Long Distance, Inc.	65		
EXCEL Communications, Inc.	<u>613</u>		
Group Totals and Index	1,503	2,799	0.5
Unidial	61		
Tel-Save, Inc.	125		
LCI International, Inc.	571		
SPRINT Corporation (Non-LEC Services)	2,065		
Cherry Communications, Inc.	<u>88</u>		
Group Totals and Index	2,910	9,274	0.3
MCI Communications Corporation	4,364		
WorldCom, Inc.	1,241		
VarTec Telecom, Inc.	189		
AT&T Corp.	5,858		
CABLE & WIRELESS PLC	<u>77</u>		
Group Totals and Index	11,729	65,367	0.2

TABLE 3.2

**LOCAL EXCHANGE CARRIERS SERVED WITH
MORE THAN 50 COMPLAINTS IN 1997**

Holding company	Complaints Served	LEC Operations Revenue (millions)	Complaint Index
Bell Atlantic	7,588	\$24,936	0.30
U S WEST	2,504	10,022	0.25
SBC	4,590	18,756	0.24
Ameritech	2,645	11,775	0.22
GTE	2,952	13,537	0.22
BellSouth	3,090	14,666	0.21
SNET	282	1,480	0.19
Citizens Utilities Company	136	860	0.16
Frontier Communications	64	667	0.10
ALLTEL	112	1,269	0.09
Cincinnati Bell	55	670	0.08
Sprint Corporation (United)	424	5,290	0.08

TABLE 3.3

BILLING AGENTS SERVED WITH MORE THAN 50 COMPLAINTS IN 1997

Billing Agents	Complaints Served	Revenue (Millions)	Complaint Index
Billing Concepts Corp.	6,059	\$2,011	3.0
OAN Services, Inc.	3,477	827	4.2
Integretel	1,522	390	3.9
International Telemedia Associates, Inc.	953	124	7.7
HOLD Billing Services	553	127	4.4
Telephone Billing Service	338		
Long Distance Billing Company, Inc.	237		
Crown Communications	121		

TABLE 3.4**OTHER COMPANIES SERVED WITH MORE THAN 50 COMPLAINTS IN 1997**

Company	Complaints Served
Long Distance Services, Inc. (MI)	1,688
Trans National Telephone	1,182
American Business Alliance	1,119
Long Distance Services (VA)	963
Minimum Rate Pricing, Inc.	812
Heartline Communications, Inc.	623
L.D. Services, Inc.	420
Network Access, Inc.	275
Integrated Tele Services	256
Inovate Telecom, Inc.	247
Future Telephone Communications, LTD.	241
Nationwide Telecom, Inc.	199
US Teleconnect	162
Network Utilization Services	151
Discount Network Services	143
Least Cost Routing, Inc.	130
Corporate Services	125
VIP Telephone Network, Inc.	115
American Telnet, Inc.	112
HSS Vending	100
America's Tele-Network	99
Telec, Inc.	92
Switched Services Communications	78
Federal Transtel, Inc.	75
Building Futures in Communications	72
Direct American Marketers	72
Lifeline	72
Pantel Communications, Inc.	72
US Telephone	72
Polar Communications Corp.	64
International Telecommunications Corporation	60
Nationwide Long Distance, Inc.	60
Psychic Discovery Network	60
ASC Telecom, Inc.	56
Branstock Communications, Inc.	55
Long Distance Network	54
Teltrust, Inc.	52

CONSUMER EXPENDITURES:

The Bureau of Labor Statistics conducts surveys of consumer expenditures, in part, to develop weights for CPI indexes. Table 4.1 shows expenditures for telephone service for all consumer units.

About 2% of all consumer expenditures are devoted to telephone service. This percentage has remained virtually unchanged over the past 15 years, despite major changes in the telephone industry and in telephone usage. Average annual expenditures on telephone service increased from \$325 per household in 1980 to \$708 in 1995.

The information on average telephone expenditures can be used to estimate the average monthly bills for households with telephone service. This average was about \$62 per month for 1995. Monthly bills have increased significantly since 1980, due partly to higher local rates, but primarily to more long distance calling. Residential toll calling grew by about 10% a year between 1985 and 1989 -- a period when toll rates declined dramatically. The average American household now spends more on long distance service than on basic local service, reflecting the growth in long distance calling since the AT&T divestiture in 1984.

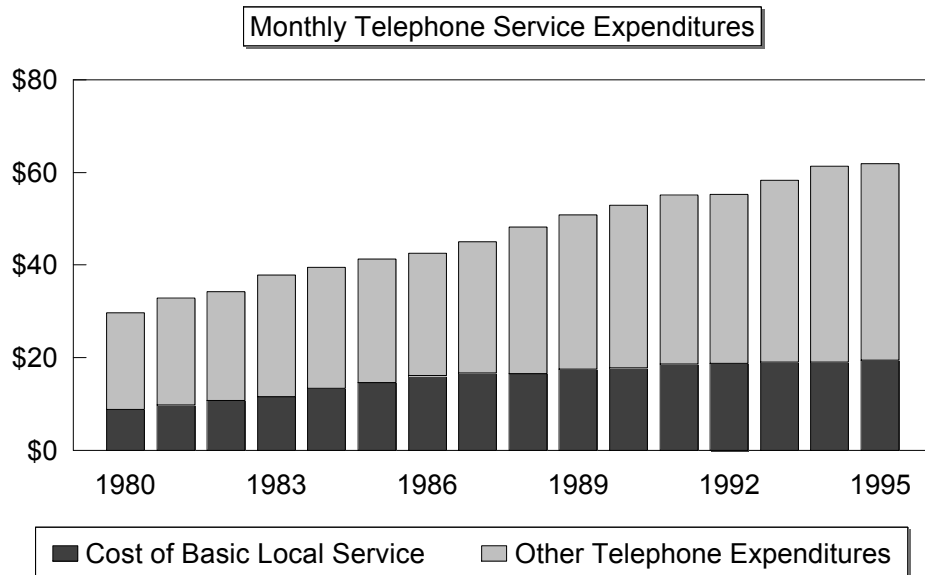
TABLE 4.1
TELEPHONE SERVICE EXPENDITURES

Year	Annual Expenditures (Average for All Households)		Monthly Expenditures (Households with Telephone Service)		
	Telephone Expenditures	Percentage of Total Expenditures	Basic Local Service Charge *	Toll and Other Telephone Expenditures **	Total Telephone Expenditures
1980	\$325	1.9 %	\$8.74	\$21	\$30
1981	360	2.1	9.71	23	33
1982	375	2.1	10.75	23	34
1983	415	2.1	11.58	26	38
1984	435	2.0	13.35	26	40
1985	455	1.9	14.54	27	41
1986	471	2.0	16.13	26	43
1987	499	2.0	16.66	28	45
1988	537	2.1	16.57	32	48
1989	567	2.0	17.53	33	51
1990	592	2.1	17.79	35	53
1991	618	2.1	18.66	36	55
1992	623	2.1	18.70	37	55
1993	658	2.1	18.94	39	58
1994	690	2.2	19.07	42	61
1995	708	2.2	19.49	42	62

Source: Bureau of Labor Statistics.

* Monthly service charges for unlimited local service, taxes, and subscriber line charges.

** Calculated as total monthly bill minus the cost of basic local service. Figures may not add due to rounding. The "Toll and Other" category is primarily toll, but also includes charges for equipment, additional access lines, connection, touch-tone, call waiting, 900 service, directory listings, etc.



EMPLOYMENT:

The Bureau of Labor Statistics (BLS) publishes monthly data regarding the total number of employed workers in the communications industry. Specifically, BLS compiles employment statistics for the entire telephone communications industry (Standard Industrial Classification (SIC) 481) and for a subset of this industry, telephone communications minus radiotelephone (SIC 4813). The difference between these two figures yields the number of employees in the radiotelephone industry (SIC 4812).

SIC 4813 includes establishments primarily engaged in furnishing telephone voice and data communications, except radiotelephone and telephone answering services. SIC 4812 includes establishments primarily engaged in providing two-way radiotelephone communication services, such as cellular telephone service. It also includes telephone paging and beeper services. Neither of these categories includes employees from establishments primarily engaged in furnishing telephone answering services, manufacturing equipment, or engineering and research services.

Table 5.1 and the associated graph show the annual average employment figures in the telephone communications industry separately for SIC 4812 and SIC 4813 from 1951 to 1997. Since 1990, employment in the telephone communications industry has grown modestly. Most of the growth in employment over this period is the result of substantial increases in the radiotelephone (cellular, beepers, paging, etc.) industry, which grew at an annual average growth rate of approximately 20%.

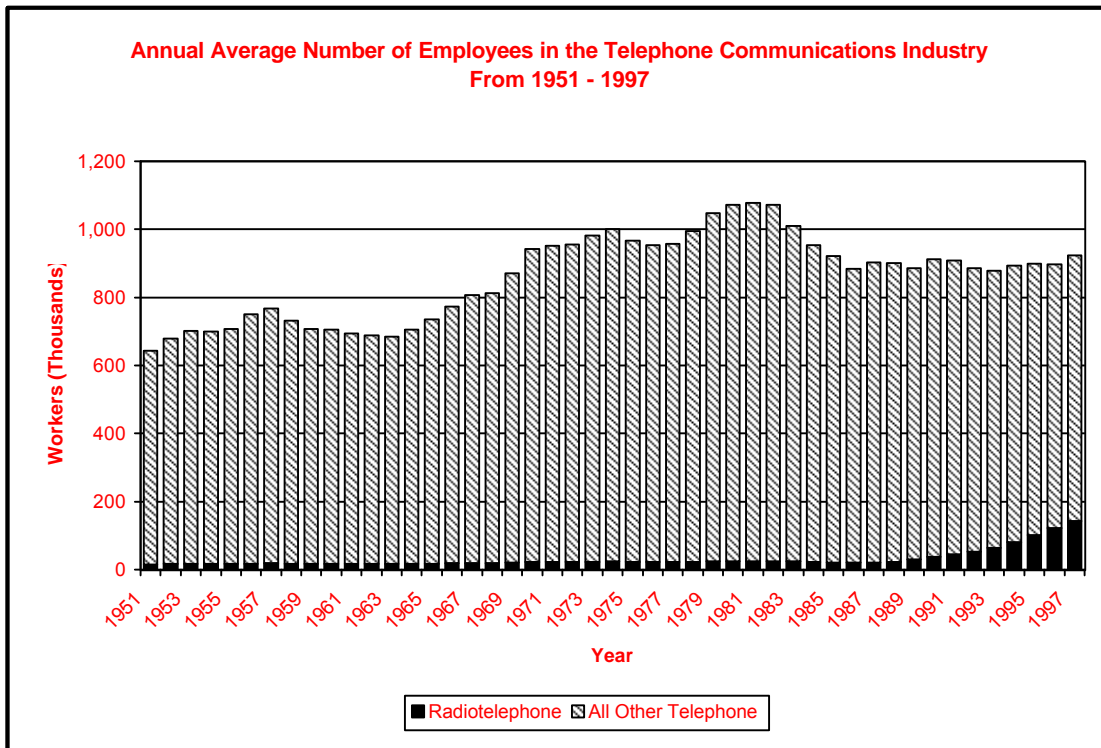
BLS also calculates an annual telecommunications industry labor productivity index. The BLS index of labor productivity relates output to the employee hours expended in producing that output. This index, presented in Table 5.2, rose an average 5.8% per year from 1951-1995, with 1995 being the most recent data available. This average labor productivity factor is higher than the average in other industries (typically somewhere around 3 to 4%). This higher than average annual growth rate may be the result of telephone companies utilizing more efficient, advanced technology and increases in human capital. Table 5.2 and the associated graph illustrate the rising trend in telecommunications labor productivity since 1951.

TABLE 5.1

**ANNUAL AVERAGE NUMBER OF EMPLOYEES IN THE TELEPHONE
COMMUNICATIONS INDUSTRY
(IN THOUSANDS)**

Year	Radiotelephone	All Other Telephone	Year	Radiotelephone	All Other Telephone	Year	Radiotelephone	All Other Telephone
1951	15.2	628.8	1967	19.0	787.5	1983 *	23.8	986.5
1952	16.0	662.4	1968	19.2	793.2	1984	22.4	931.0
1953	16.6	685.6	1969	20.5	849.5	1985	21.6	899.1
1954	16.5	682.3	1970	22.2	919.9	1986 *	20.7	862.7
1955	16.6	690.1	1971	22.4	929.2	1987	21.1	880.8
1956	17.7	733.5	1972	22.5	933.6	1988	23.2	877.9
1957	18.1	750.1	1973	23.2	958.0	1989 *	29.9	856.0
1958	17.2	714.9	1974	23.6	977.2	1990	38.2	874.8
1959	16.7	690.4	1975	22.8	943.8	1991	45.6	863.6
1960	16.6	689.4	1976	22.5	930.7	1992	53.1	832.1
1961	16.3	677.0	1977	22.6	934.7	1993	63.1	815.9
1962	16.2	671.3	1978	23.4	971.4	1994	81.0	812.4
1963	16.2	669.3	1979	24.8	1023.4	1995	102.5	797.2
1964	16.6	689.5	1980	25.3	1046.9	1996	122.8	774.9
1965	17.3	717.9	1981	25.3	1052.0	1997	142.2	781.2
1966	18.3	755.1	1982	25.3	1046.5			

* Due to Bell operating company employee strikes in 1983, 1986, and 1989, which lasted one month each, the reported annual average number of workers for those particular years is an average of the eleven months in which workers did not strike.

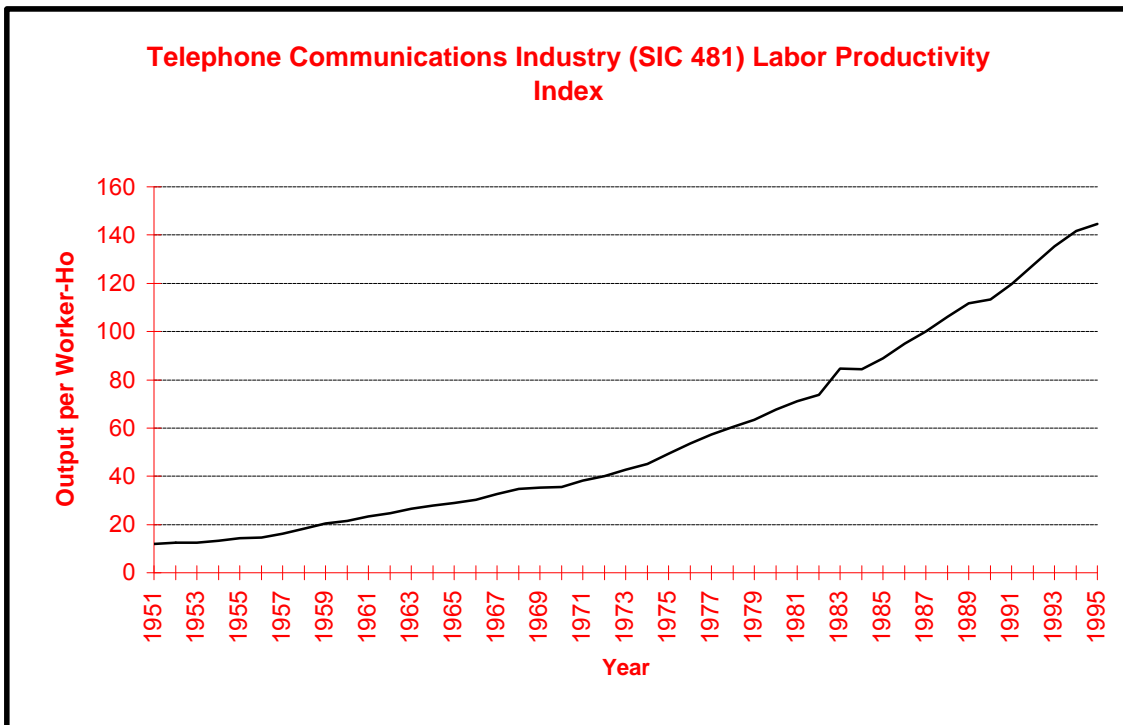


Source: Bureau of Labor Statistics.

TABLE 5.2

**LABOR PRODUCTIVITY INDEX FOR THE TELEPHONE COMMUNICATIONS
INDUSTRY MEASURED IN OUTPUT PER HOUR (OPH)
(BASE YEAR 1987=100)**

Year	OPH Index	Year	OPH Index	Year	OPH Index
1951	12.0	1966	30.3	1981	71.1
1952	12.4	1967	32.6	1982	73.8
1953	12.6	1968	34.7	1983	84.6
1954	13.2	1969	35.3	1984	84.5
1955	14.3	1970	35.6	1985	88.9
1956	14.6	1971	38.3	1986	95.0
1957	16.1	1972	40.1	1987	100.0
1958	18.2	1973	42.7	1988	106.2
1959	20.3	1974	45.0	1989	111.6
1960	21.4	1975	49.3	1990	113.3
1961	23.3	1976	53.6	1991	119.8
1962	24.8	1977	57.3	1992	127.7
1963	26.6	1978	60.6	1993	135.2
1964	27.8	1979	63.5	1994	141.6
1965	28.9	1980	67.6	1995	144.6



Source: Bureau of Labor Statistics.

EQUAL ACCESS:

The Bell operating companies (BOCs) serve slightly more than 75% of the nation's telephone lines and are obligated to offer equal access (i.e., "1-plus" dialing) to all long distance carriers. The BOCs have converted almost all of their lines to equal access, although there are a few lines at smaller, older offices where equal access is being provided as the offices are converted to more modern equipment. Non-Bell telephone companies, which serve almost 25% of the nation's lines, have converted almost 98% of their lines.

Table 6.1 shows the number of telephone lines and the percentage of these lines converted to equal access since divestiture. BOCs converted almost half of their lines between December 1984 and December 1985, and an additional 40% in the next three years. Including independents, the United States reached 99% equal access conversion by mid-1996.

Table 6.2 shows the number of central office wire centers in each state that had been converted to equal access as of May 1, 1998. The table is derived from NECA's Tariff 4 database, which is updated by local exchange carriers. In some cases, there is a lag between an office converting to equal access and that change being reflected in the database. Thus, in some cases, the data continue to show some offices not yet converted to equal access even in states where equal access is reported to be available to all customers. Because the non-equal access offices tend to be smaller offices, the percentage of converted lines is significantly greater than the percentage of converted offices.

TABLE 6.1
DEVELOPMENT OF EQUAL ACCESS
(PRESUBSCRIBED ACCESS LINES IN THOUSANDS)

	BELL COMPANIES		OTHER COMPANIES		TOTAL	
	LINES	% EQUAL ACCESS	LINES	% EQUAL ACCESS	LINES	% EQUAL ACCESS
1984 JUNE	84,321	0	26,278	0.00	110,599	0.0
DECEMBER	85,457	4	26,633	1.00	112,090	3.1
1985 JUNE	86,609	27	26,992	2.48	113,601	21.1
DECEMBER	87,777	51	27,355	3.45	115,132	39.6
1986 JUNE	88,960	62	27,724	13.64	116,684	50.4
DECEMBER	90,159	74	28,098	27.99	118,257	63.3
1987 JUNE	91,374	78	28,477	37.68	119,851	68.2
DECEMBER	92,606	85	28,860	47.77	121,467	75.9
1988 JUNE	93,520	87	29,145	51.58	122,665	78.9
DECEMBER	94,813	91	29,548	56.32	124,361	83.0
1989 JUNE	96,632	93	30,115	59.59	126,747	85.4
DECEMBER	98,214	94	30,268	60.75	128,482	86.2
1990 JUNE	99,815	95	30,962	63.77	130,777	87.6
DECEMBER	100,993	97	31,416	70.63	132,409	90.6
1991 JUNE	102,027	97	31,870	73.45	133,896	91.7
DECEMBER	103,102	98	32,185	77.52	135,287	93.4
1992 JUNE	104,060	99	32,643	80.67	136,704	94.5
DECEMBER	105,744	99	32,981	84.50	138,725	95.8
1993 JUNE	107,084	99	33,531	86.64	140,615	96.3
DECEMBER	108,847	100	33,963	89.12	142,809	97.1
1994 JUNE	110,583	100	34,646	90.60	145,229	97.6
DECEMBER	113,092	100	35,387	92.20	148,479	98.0
1995 JUNE	114,827	100	35,518	94.40	150,335	98.6
DECEMBER	116,344	100	36,258	95.70	152,602	98.9
1996 JUNE	119,119	100	36,883	96.80	156,002	99.2
DECEMBER	120,910	100 *	37,763	97.60	158,672	99.4

SOURCE: NATIONAL EXCHANGE CARRIER ASSOCIATION.

*99.99% OF BELL LINES HAVE BEEN CONVERTED TO EQUAL ACCESS.

TABLE 6.2
CENTRAL OFFICES CONVERTED TO EQUAL ACCESS
(as of August 1, 1998)

	Bell Company Central Offices			Other Central Offices			Bell & Other Central Offices	
	Equal Access	Non-Equal Access	% Equal Access	Equal Access	Non-Equal Access	% Equal Access	Total Offices	% Equal Access
Alabama	149	0	100.0 %	209	10	95.4 %	368	97.3 %
Alaska	0	0	N.A.	40	215	15.7	255	15.7
Arizona	158	0	100.0	79	28	73.8	265	89.4
Arkansas	145	0	100.0	249	27	90.2	421	93.6
California	712	0	100.0	388	10	97.5	1110	99.1
Colorado	190	1	99.5	95	24	79.8	310	91.9
Connecticut	1	0	100.0	144	0	100.0	145	100.0
Delaware	33	0	100.0	0	0	N.A.	33	100.0
District of Columbia	33	0	100.0	0	0	N.A.	33	100.0
Florida	213	0	100.0	275	17	94.2	505	96.6
Georgia	253	0	100.0	243	10	96.0	506	98.0
Guam	0	0	N.A.	17	0	100.0	17	100.0
Hawaii	0	0	N.A.	103	1	99.0	104	99.0
Idaho	84	0	100.0	103	16	86.6	203	92.1
Illinois	260	54	82.8	702	47	93.7	1063	90.5
Indiana	169	5	97.1	405	12	97.1	591	97.1
Iowa	152	0	100.0	670	10	98.5	832	98.8
Kansas	187	0	100.0	396	9	97.8	592	98.5
Kentucky	180	0	100.0	201	18	91.8	399	95.5
Louisiana	234	0	100.0	90	14	86.5	338	95.9
Maine	145	1	99.3	113	9	92.6	268	96.3
Maryland	219	0	100.0	1	0	100.0	220	100.0
Massachusetts	282	2	99.3	3	0	100.0	287	99.3
Michigan	329	30	91.6	344	29	92.2	732	91.9
Minnesota	193	0	100.0	541	10	98.2	744	98.7
Mississippi	208	0	100.0	51	12	81.0	271	95.6
Missouri	262	0	100.0	384	103	78.9	749	86.2
Montana	81	0	100.0	158	48	76.7	287	83.3
Nebraska	78	0	100.0	370	28	93.0	476	94.1
Nevada	50	1	98.0	52	25	67.5	128	79.7
New Hampshire	126	1	99.2	28	1	96.6	156	98.7
New Jersey	212	0	100.0	27	1	96.4	240	99.6
New Mexico	72	0	100.0	76	46	62.3	194	76.3
New York	587	1	99.8	299	18	94.3	905	97.9
North Carolina	144	0	100.0	350	25	93.3	519	95.2
North Dakota	47	0	100.0	161	94	63.1	302	68.9
Ohio	241	17	93.4	543	70	88.6	871	90.0
Oklahoma	236	0	100.0	291	37	88.7	564	93.4
Oregon	98	0	100.0	212	14	93.8	324	95.7
Pennsylvania	402	0	100.0	408	46	89.9	856	94.6
Puerto Rico	0	0	N.A.	91	0	100.0	91	100.0
Rhode Island	30	0	100.0	0	0	N.A.	30	100.0
South Carolina	119	0	100.0	159	2	98.8	280	99.3
South Dakota	50	0	100.0	196	16	92.5	262	93.9
Tennessee	202	0	100.0	148	33	81.8	383	91.4
Texas	660	1	99.8	969	17	98.3	1647	98.9
Utah	85	0	100.0	70	18	79.5	173	89.6
Vermont	92	2	97.9	43	1	97.7	138	97.8
Virgin Islands	0	0	N.A.	6	0	100.0	6	100.0
Virginia	234	0	100.0	244	7	97.2	485	98.6
Washington	147	0	100.0	258	10	96.3	415	97.6
West Virginia	146	0	100.0	80	10	88.9	236	95.8
Wisconsin	140	1	99.3	506	2	99.6	649	99.5
Wyoming	30	0	100.0	34	24	58.6	88	72.7
Total United States	9,100	117	98.7 %	11,625	1,224	90.5 %	22,066	93.9 %

* The Information in this table is based on the NECA FCC Tariff No. 4 database. Some companies do not report information on their remote switches in Tariff No. 4. As a result, central office counts may be lower than reported in other sources.

INTERNATIONAL TELEPHONE SERVICE:

International telecommunications has become an increasingly important segment of the telecommunications market. International telephone calling -- propelled by technological innovation, increased international trade and travel, and stable or declining international telephone rates -- has skyrocketed. The number of calls increased from 200 million in 1980 to 3.5 billion in 1996. The initial filings for 1997 are due from the carriers by July 31, 1998. In 1996, Americans spent about \$14 billion on international calls. International private line revenues have also increased since 1980, but telex and telegraph services declined substantially over the same period. These trends are shown in Table 7.1.

U.S. and foreign carriers compensate each other when one carries traffic that the other bills. The number of calls billed in the United States increased at a faster pace than calls billed in foreign countries, contributing to rapid increases in net settlement payments to foreign carriers. These net payments from the United States to other countries reached \$5.6 billion in 1996. On average, carriers billed \$.74 per minute for international calls in 1996 and paid \$.43 per billed minute in settlements. Trends in settlement payments are shown in Table 7.2. On average, for all traffic, carriers retained \$.30 for each international minute that they handled in 1996.

International traffic data are available on a country-by-country basis. Table 7.3 summarizes traffic by region of the world. Five markets -- Canada, Mexico, the United Kingdom, Germany, and Japan -- currently account for about half of the international calls billed in the United States.

Since 1985, when MCI first entered the market in competition with AT&T, numerous carriers have begun to provide international service. Forty-seven carriers provided international telecommunications service in 1996 by using their own facilities or lines leased from other carriers. These carriers billed \$15 billion for international services, of which \$14 billion was for telephone service. Table 7.4 shows the U.S.-billed revenues for each of the 47 carriers. Together, AT&T, MCI, and Sprint account for 95% of the facilities-based international service billed in the United States.

In addition to the 47 carriers that owned or leased facilities, about 300 carriers reported the resale of international message telephone service. These carriers reported \$3.5 billion of resale revenue in 1996. The revenues of the fifty largest resellers are shown in Table 7.5.

TABLE 7.1
INTERNATIONAL SERVICE FROM THE UNITED STATES TO FOREIGN POINTS
(Minute, message, and revenue amounts shown in millions)

	Telephone Service					Other Services			
	Minutes	Messages	Billed Revenue			Billed Revenue			
			Total	Per minute *	Per call	Telex	Telegraph	Private Line	Misc.
1980	1,569	199	\$2,097	\$1.34	\$10.53	\$325	\$63	\$115	
1981	1,857	233	2,239	1.21	9.61	350	62	126	
1982	2,187	274	2,382	1.09	8.70	363	56	138	
1983	2,650	322	2,876	1.09	8.92	379	54	154	
1984	3,037	367	3,197	1.05	8.71	394	46	158	
1985	3,350	411	3,435	1.03	8.37	415	45	172	
1986	3,917	482	3,891	0.99	8.07	390	42	175	
1987	4,480	570	4,559	1.02	8.00	360	35	191	
1988	5,190	687	5,507	1.06	8.02	310	30	194	
1989	6,109	835	6,517	1.07	7.80	243	27	208	
1990	7,215	984	7,626	1.06	7.75	196	24	201	
1991	8,986	1,371	9,096	1.01	6.63	200	15	303	\$23
1992	10,156	1,643	10,179	1.00	6.20	155	16	313	24
1993	11,393	1,926	11,353	1.00	5.89	135	12	365	23
1994	13,393	2,313	12,255	0.92	5.30	123	12	432	55
1995	15,837	2,821	13,990	0.88	4.96	119	6	432	55
1996	19,119	3,485	14,079	0.74	4.04	119	5	649	26

TABLE 7.2
INTERNATIONAL TELEPHONE SERVICE SETTLEMENTS
(Revenue amounts shown in millions)

	Billed Revenue	Owed to Foreign Carriers	Retained Revenue	Due from Foreign Carriers	Net Settlements	Net Revenue	Average per Minute		
							Settlement Owed for U.S. Billed Calls	Settlement Due for Foreign Billed Calls	Net Revenue All Traffic
1980	\$2,097	\$1,063	\$1,034	\$716	(\$347)	\$1,750	\$0.68	\$0.62	\$0.64
1981	2,239	1,330	910	799	(531)	1,708	0.72	0.56	0.52
1982	2,382	1,674	708	961	(712)	1,670	0.77	0.60	0.44
1983	2,876	2,036	841	1,086	(950)	1,926	0.77	0.60	0.43
1984	3,197	2,269	928	1,066	(1,203)	1,994	0.75	0.54	0.40
1985	3,435	2,369	1,066	1,239	(1,130)	2,305	0.71	0.55	0.41
1986	3,891	2,802	1,089	1,387	(1,414)	2,476	0.72	0.56	0.39
1987	4,559	3,309	1,250	1,634	(1,675)	2,884	0.74	0.61	0.39
1988	5,507	3,868	1,640	1,840	(2,028)	3,480	0.75	0.62	0.41
1989	6,517	4,513	2,004	2,115	(2,398)	4,119	0.74	0.61	0.42
1990	7,626	5,079	2,547	2,317	(2,762)	4,863	0.70	0.60	0.42
1991	9,096	5,792	3,304	2,493 **	(3,298)	5,798	0.64	0.47	0.42
1992	10,179	5,945	4,234	2,601 **	(3,344)	6,835	0.59	0.43	0.43
1993	11,353	6,327	5,027	2,678 **	(3,649)	7,704	0.56	0.39	0.44
1994	12,255	6,947	5,308	2,658 **	(4,289)	7,966	0.52	0.35	0.39
1995	13,990	7,559	6,432	2,623 **	(4,936)	9,054	0.48	0.29	0.39
1996	14,079	8,206	5,873	2,560 **	(5,645)	8,434	0.43	0.27	0.30

Sources: Industry Analysis Division, *Trends in the International Telecommunications Industry* and Section 43.61 *International Telecommunications Data*.

* Billed revenue per minute for international service differs in Table 14.3 and Table 7.1. Data in Table 14.3 is based on traffic to foreign points for all U.S. carriers serving all U.S. points. Data for Table 7.1 is based on traffic for domestic U.S. points only. The domestic U.S. includes Puerto Rico but excludes American Samoa, Guam, the Northern Mariana Islands, and the U.S. Virgin Islands.

** Includes transiting traffic.

TABLE 7.3

INTERNATIONAL MESSAGE TELEPHONE SERVICE FOR 1996

(Figures rounded to the nearest million)

International Point	Traffic Billed in the United States					Traffic Billed in Foreign Countries				Total U.S. Carrier Retained Revenue
						Originating or Terminating in the United States			TRANSITING	
	Number of Messages	Number of Minutes	U.S. Carrier Revenue	Owed to Foreign Carriers	Retained Revenue	Number of Messages	Number of Minutes	Due from Foreign Carriers	Retained Revenue	
Western Europe	787	4,073	\$2,719	\$856	\$1,862	509	1,970	\$433	\$32	\$2,327
North and Central America	1,207	6,399	3,388	1,879	1,510	887	3,876	614	7	2,130
Asia	659	3,756	3,448	2,437	1,011	247	1,015	607	31	1,649
South America	294	1,583	1,346	980	366	94	388	240	11	617
Caribbean	199	1,237	1,045	627	418	86	363	170	5	593
Eastern Europe	77	535	549	335	215	29	125	84	7	306
Oceania	78	411	353	123	231	43	216	59	10	301
Middle East	103	655	692	569	123	41	178	150	20	293
Africa	90	522	563	382	181	25	88	62	19	262
Other Regions	2	4	30	27	4	1	5	4	*	8
Total for Foreign Points	3,485	19,119	14,079	8,206	5,873	1,957	8,195	2,418	142	8,433
Total for U.S. Points	10	57	56	9	47	4	28	5	1	53
Total for all International Points	3,495	19,176	14,135	8,215	5,920	1,962	8,223	2,424	143	8,486

Source: Industry Analysis Division, Section 43.61 International Telecommunications Data.

The region totals include all traffic reported by carriers serving Alaska, Hawaii, Puerto Rico, and the conterminous United States, and include traffic between these points and offshore U.S. points such as Guam and the U.S. Virgin Islands. This traffic is shown separately as the total for U.S. points, and also is included in the total for all international points.

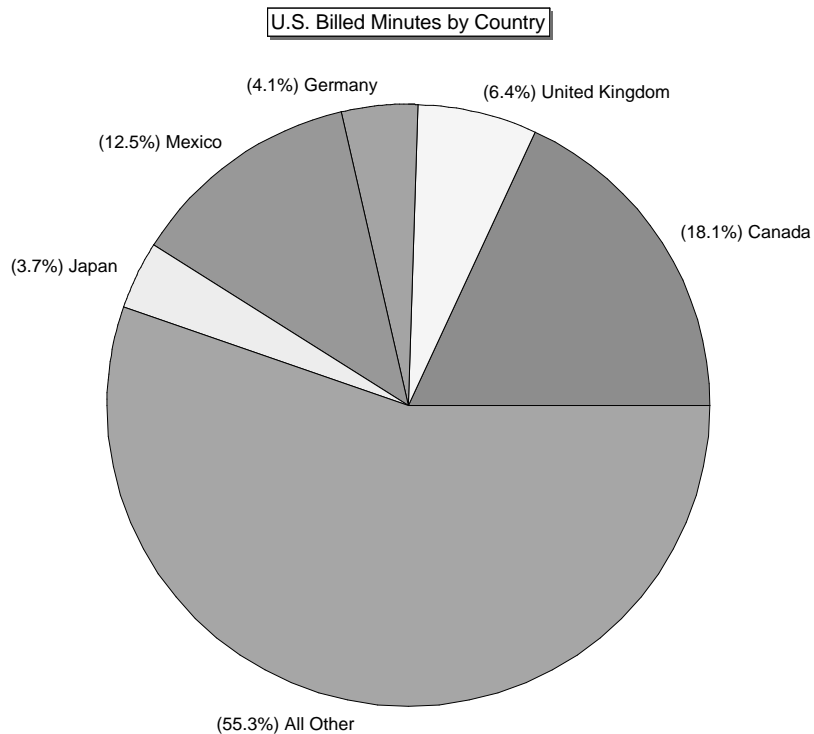


TABLE 7.4

U.S. BILLED REVENUES OF FACILITIES-BASED AND FACILITIES-RESALE CARRIERS IN 1996 *
(REVENUE AMOUNTS SHOWN IN MILLIONS)

	International Service					Total International Billed Revenue
	Telephone	Telex	Telegraph	Private Line	Miscellaneous	
ACC Global Corp.	2					2
American Samoa Office of Communications	3					3
AmericaTel Corporation				2		2
Asian American Telcom	**			**	**	**
AT&T Corp.	8,559	73	3	261	5	8,901
BT North America, Inc.	**			5		5
Cable & Wireless, Inc.	12			5		17
Communication TeleSystems International	17					17
Comsat Corporation				6	2	8
Cyberlink, Inc.				**		**
DirectNet Telecommunication	1			4		5
Esprit Telecom (U.K.), Ltd.	7					7
FaciliCom International, L.L.C.	4					4
Fedex International Transmission Corporation				**		**
INOROLA Corporation	20					20
Geocomm Corporation				1		1
Golden Pages (Jersey) Ltd.	21					21
GTE Corporation	27			2	**	30
Harris Corporation	2					2
Impsat USA, Inc.				1		1
Intermedia Communications Inc.					**	**
IT&E Overseas, Inc.	40			1		41
Local Communications Network, Inc.				5		5
MCI / Western Union International	3,550	36	2	190	1	3,778
Melbourne International Comm., Ltd.	1			1		2
Micronesian Telecommunications Corp.	17	**		1		18
MicroNet, Inc.					1	1
Mobile Satellite Communications, Inc.				2	**	2
Northern Communications, Inc.				**		**
Overseas Telecommunications, Inc.				2		2
Pacific Gateway Exchange, Inc.	34			**		35
PanAmSat Comm. Carrier Services, Inc.				**		**
PSO, Inc. d/b/a Canal Uno					**	**
RSL COM U.S.A., Inc	21			1		22
Satellite Communication Systems, Inc.	**			3		4
Sprint	1,493	3		60	15	1,571
Startec Inc.	7					7
T-One Communications Corporation	1					1
Telecomunicaciones Ultramarinas-Puerto Rico				2		2
Telefonica Larga Distancia, Inc.	19			**		19
TerraLink Communications, Ltd.	2					2
The Associated Group, Inc.				**		**
The Williams Companies, Inc./VYVX, Inc.					2	2
TresCom International, Inc.	4			**		4
USFI, INC.	**					**
Viatel Global Communications/YYC Corp.	6					6
WorldCom, Inc. d/b/a LDDS WorldCom	364	7	**	105		475
Total for the 47 companies shown ***	\$14,233	\$119	\$5	\$658	\$26	\$15,043

* Totals exclude pure resale services.

** Represents revenues greater than \$0 but less than \$500,000.

*** Table 7.4 includes revenue for American Samoa, Guam, the Northern Mariana Islands, and the U.S. Virgin Islands. Other tables in this section exclude this traffic. U.S. carriers billed \$165 million for telephone service for these points and \$14,879 million for domestic U.S. points. These figures add to the \$15,043 million total shown in this table.

TABLE 7.5
TOP PROVIDERS OF PURE RESALE INTERNATIONAL MTS IN 1996

	Number of Messages	Number of Minutes	U.S. Carrier Revenue	Percent of total IMTS Resale Revenue
WorldCom	182,997,850	817,597,796	411,320,545	11.900%
Cable & Wireless	169,151,643	690,269,622	298,022,074	8.622%
Cherry Communications Incorporated	141,807,214	673,698,496	273,433,852	7.911%
USA Global Link, Inc.	106,162,096	360,951,126	241,640,921	6.991%
Star Telecommunications, Inc.	100,435,628	479,681,377	205,693,423	5.951%
Telegroup, Inc.	72,750,490	317,192,135	179,809,874	5.202%
Frontier Corporation	52,185,195	202,471,860	164,457,370	4.758%
LCI International Telecom Corp.	77,176,500	308,706,000	154,669,000	4.475%
Pacific Gateway Exchange, Inc.	89,287,141	397,227,557	127,021,971	3.675%
WorldxChange Communications	86,574,413	423,697,204	126,103,737	3.648%
TresCom International, Inc.	46,302,529	227,128,259	110,659,199	3.201%
Excel Telecommunications, Inc.	12,442,140	100,607,163	90,713,526	2.624%
Sprint	18,522,100	97,141,128	87,178,428	2.522%
PhoneTime, Inc.	40,435,049	222,392,771	81,462,472	2.357%
ACC Long Distance Corp.	25,999,637	119,644,604	44,170,562	1.278%
MCI International, Inc.	7,641,031	45,958,200	42,139,500	1.219%
Viatel Global Communications/YYC Corp.	12,024,160	43,809,687	37,818,053	1.094%
USFI, Inc.	18,250,939	73,710,510	36,499,000	1.056%
National Telephone & Communications, Inc.	5,102,985	39,758,763	36,196,033	1.047%
Capital Network System, Inc.	1,342,710	6,321,121	30,151,747	0.872%
Telco Communications Group, Inc.	3,228,471	25,100,526	26,736,068	0.773%
Access Authority, Inc.	10,002,732	93,872,807	25,473,244	0.737%
STARTEC Inc.	7,057,698	35,288,491	24,349,059	0.704%
Gateway Worldwide Communications Inc.	3,929,091	17,433,461	24,073,006	0.696%
RSL COM U.S.A., Inc.	8,419,604	56,057,178	23,823,225	0.689%
T-One Communications Corporation	15,724,708	62,431,009	22,334,538	0.646%
VarTec Telecom, Inc.	3,405,423	26,730,141	19,408,822	0.562%
Brittan Communications International Corporation (BCI)	2,003,177	14,799,236	19,072,823	0.552%
URSUS Telecom Corporation	3,865,017	14,303,909	18,863,956	0.546%
GTE	361,4601	128,207,59	175,688,02	0.508%
MATRIX Telecom	2,886,090	18,699,423	16,965,361	0.491%
Cyberlink, Inc.	6,986,424	34,383,850	16,642,552	0.481%
Primus Telecommunications, Inc.	5,708,859	28,132,085	13,871,137	0.401%
Call Concepts Corporation	5,704,913	26,217,132	13,434,065	0.389%
FaxSav Incorporated	9,174,204	15,536,638	12,970,988	0.375%
Working Assets Funding Services, Inc.	1,693,301	13,984,085	12,569,936	0.364%
FaciliCom International, L.L.C.	3,197,736	21,128,492	12,370,474	0.358%
Tel-Save, Inc.	3,454,233	12,253,035	12,138,956	0.351%
U.S. Long Distance Inc.	2,856,352	11,095,030	12,113,737	0.350%
Telefonica Larga Distancia (TLD)	981,593	6,590,495	11,706,963	0.339%
Qwest Communications Corporation	4,831,447	22,377,945	11,374,707	0.329%
IMTS, Inc. d/b/a Telenational Communications	4,031,329	17,951,686	11,023,580	0.319%
Home Owners Long Distance, Inc. (HOLD)	6,579,139	39,845,318	10,770,592	0.312%
National Telecommunications of Florida	4,661,037	15,975,016	9,673,261	0.280%
Coast International Telecommunications	3,160,021	14,082,054	9,396,834	0.272%
Rapid Link, USA	3,497,829	42,473,409	8,825,420	0.255%
Intermedia Communications Inc.	5,072,021	17,752,072	8,609,755	0.249%
Prairie Systems, Inc.	8,059,269	17,940,521	8,273,485	0.239%
General Communications Corp. (GCI)	1,023,019	7,372,316	8,220,648	0.238%
TeleData International, Inc.	1,952,981	8,304,360	8,121,094	0.235%
Carriers not shown above	95,315,010	383,882,047	\$226,625,409	6.6%
Total	1,508,668,779	6,782,779,905	\$3,456,563,784	

Source: Industry Analysis Division, *Section 43.61 International Telecommunications Data.*

LOCAL COMPETITION:

For most of this century, households and businesses have had no choice in selecting their local telephone company. Mobile telephone services are widely available, at an increasing range of prices, but they are not yet accepted in the marketplace as complete substitutes for traditional local telephone service. In the 1980s, new companies began to offer some competitive local telephone services over wired networks. These companies, which were often called "competitive access providers" or CAPs, primarily offered a way for telephone users to reach ("access") long distance ("interexchange") carriers without using the facilities of the established ("incumbent") local telephone companies. The CAPs (e.g., MFS Communications Company and Teleport Communications Group) typically built and/or leased telecommunications network facilities in areas with concentrations of office buildings and offered to carry long distance calls between business customers and the networks of the interexchange carriers. To some extent CAPs also carried local telephone calls among their customers, but they did not offer local calling services to the public generally.

In the 1990s, some CAPs and other companies, including affiliates of cable television companies (e.g., Hyperion Telecommunications, Time Warner Communications) and local service divisions of long distance companies (e.g., MCImetro), began to offer local telephone calling services to a broader range of telephone users. For example, some companies that were already established in larger cities added operations in smaller cities, where the typical customer is more likely to be a small or medium size business than a large business, and some new companies (e.g., McLeodUSA Incorporated) focused on smaller cities from the beginning. The newer competitors are often called "competitive local exchange carriers" or CLECs, although the terms CAPs and CLECs are often used interchangeably.

The Commission imposes no data reporting requirements on new local service competitors beyond the requirement, which applies to all telecommunications companies, to report their nationwide revenues each year, and the information provided by individual companies receives confidential treatment.

Nationwide Local Service Revenues and New Competitor Share

Table 8.1 shows that local service revenues of new local service competitors have been growing much faster than the local service revenues of the incumbent local telephone companies. The new local service competitors are starting from a very small base, however, so their share of total local service revenues remains small.

Local telephone services can be categorized generally as calls made within a local area ("telephone exchange service") and connections made to a long distance carrier when a telephone user makes or receives a long distance call ("exchange access service"). Incumbent local telephone companies provide both types of local telephone service to the general public.

TABLE 8.1
NEW LOCAL SERVICE COMPETITORS
(Dollar Amounts Show in Millions)

	1993	1994	1995	1996	Average Annual Growth '93-'96
Number of CAPs/CLECs	20	30	57	109	76.0%
CAP/CLEC Local Service Revenues*	\$178	\$281	\$595	\$949	74.7%
Bell Company Local Service Revenues*	\$58,838	\$61,415	\$65,485	\$70,290	6.1%
Local Service Revenues* of Other Incumbent Local Telephone Companies	\$20,828	\$23,424	\$24,269	\$24,899	6.1%
All Other Local Service Revenues*	\$850	\$1,298	\$388	\$379	**
Nationwide Local Service Revenues*	\$80,694	\$86,418	\$90,737	\$96,517	6.2%
CAP/CLEC Share of Nationwide Local Service Revenues*	0.2%	0.3%	0.7%	1.0%	

Sources: Industry Analysis Division, Telecommunications Industry Revenue: TRS Fund Worksheet Data (rel. Dec. 1994; Feb. 1996; Dec. 1996; and Nov. 1997); Industry Analysis Division, Carrier Locator: Interstate Service Providers (rel. Nov. 1997).

* Local service revenues are here considered to include revenues from local exchange, local private line, and other local services, as well as from interstate and intrastate access services, but not to include revenues from cellular or other mobile services or from toll (i.e., long distance) services.

** Not meaningful; reporting of revenues among local and toll categories appears to be inconsistent from year to year.

Facilities Investment of New Local Service Competitors:
Fiber Optic Transmission Capacity

Chart 8.1 depicts the comparative investment in fiber optic transmission systems by new local service competitors and the incumbent local telephone companies in recent years. The new competitors doubled the total amount of fiber they had in place from approximately 0.6 million fiber miles at the end of 1995 to about 1.3 million fiber miles at the end of 1996. In contrast, the incumbent local telephone companies had in place about 12.3 million fiber miles in 1996, an increase of approximately 15% over year-end 1995. "Fiber miles" are calculated by multiplying the number of miles of fiber cable -- including both lit fiber (i.e., fiber that has been activated to carry telecommunications by the addition of optoelectronic equipment) and dark fiber (i.e., fiber that has not yet been activated) -- by the number of fiber strands per cable.

At the end of 1996, therefore, new local service competitors had approximately 10% of the total fiber optic systems capacity, as measured by fiber miles, that apparently is or could be activated to carry calls within local telecommunications markets and to deliver calls to long distance carriers. This comparison of relative fiber deployment may overstate the relative size of new local service competitor networks, however, because the transmission networks of the incumbent local telephone companies consist predominantly -- as much as 90%, by some estimates -- of copper-based facilities. The Commission collects no information on the extent to which the fiber optic transmission systems of new local service competitors are activated to carry telephone calls, and in this respect as well they may differ from the incumbent local telephone companies.

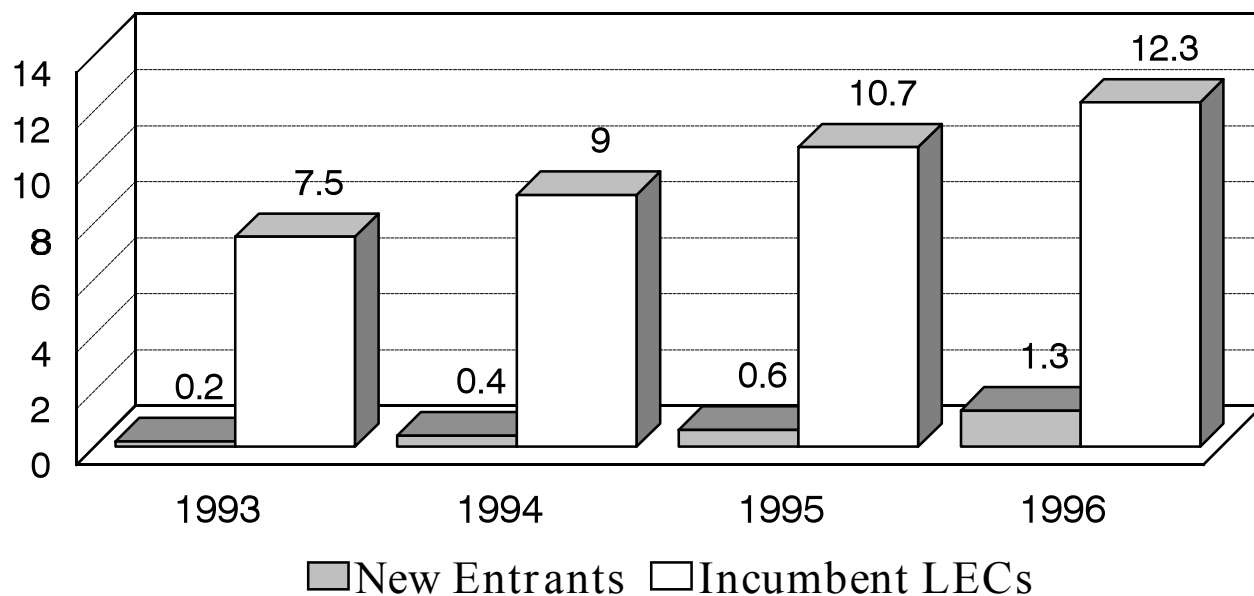
Facilities Investment of New Local Service Competitors:
Equipment Installed in Incumbent Local Telephone Company Central Offices

New local service competitors may more effectively compete in local telephone service markets -- and, in particular, may more effectively compete for the mass, or residential, market -- if they are able to locate their own telephone network equipment near the incumbent local telephone company switch that directly serves a customer that the new competitor seeks to serve. The Commission first ordered "collocation" arrangements to be made available for the provision of competitive access services (i.e., connecting customers directly to long distance telephone companies). In addition, the Telecommunications Act of 1996 requires incumbent local telephone companies, with exceptions for certain rural telephone companies, to provide collocation arrangements in a form that will enable a new local service competitor to use portions of the incumbent company's network (e.g., the telephone line that runs to the customer's home or business) to compete against the incumbent company. Wherever feasible, the 1996 Act requires incumbent local telephone companies to provide "physical collocation," in which the competitor places its own equipment on the premises of the incumbent telephone company and performs service and maintenance on that equipment, in preference to the generally less desirable "virtual collocation," in which the incumbent company owns or leases, and services and maintains, designated equipment on its premises for the competitor's use.

Chart 8.1

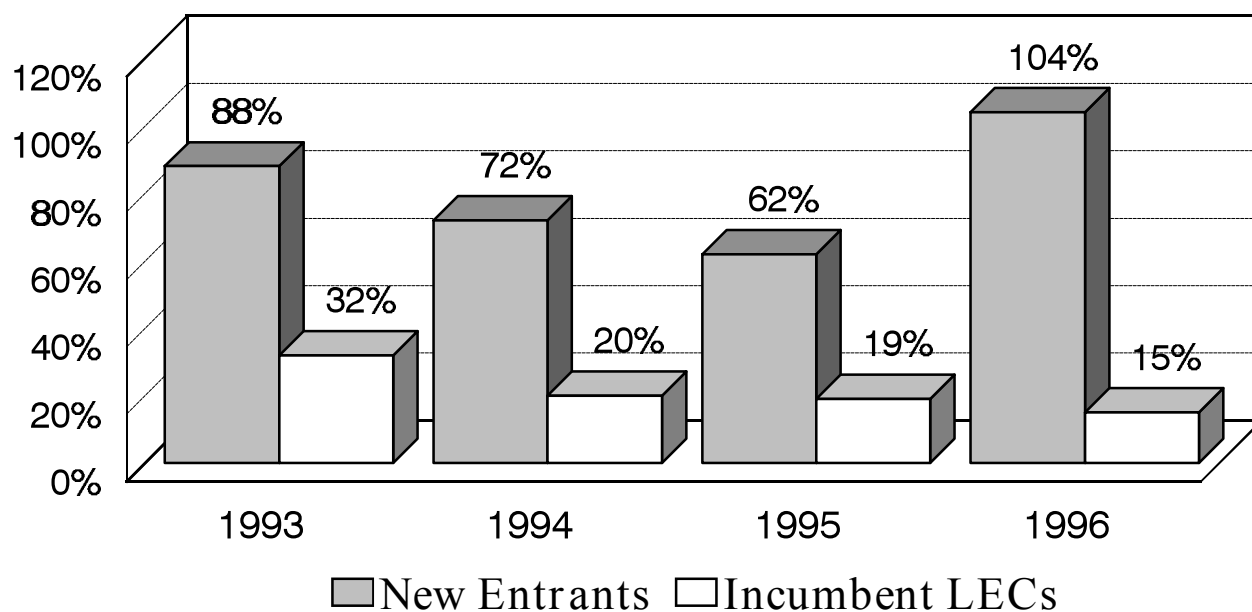
Fiber Deployed (Measured by Fiber Miles)

(Amounts Shown in Millions)



Growth in Fiber Deployed

(Percent Growth over Prior Year)



Source: Fiber Deployment Update -- End of Year 1996

The Commission required the largest incumbent local telephone companies to report which of their central office locations (i.e., structures housing one or more telephone switches) have collocation arrangements, and to identify the competitors using such collocation arrangements. Table 8.2 shows that the number of incumbent telephone company central office locations with collocation arrangements increased between 1995 and 1997. The table also demonstrates that the number of new local service competitors using collocation arrangements increased between the two years. Unfortunately, the reporting incumbent telephone companies used different definitions (e.g., operational arrangements versus arrangements that are operational or in progress versus requested arrangements) when reporting collocation arrangements in a single year, and in some cases a company used different definitions in its filings in the two reporting years. Thus, using data in Table 8.2 to compare the development of local service competition in the areas served by different incumbent local telephone companies may be misleading, and these data should not be summed up for the incumbent companies.

The information presented in Table 8.3 suggests that local service competitors tend first to serve areas where many customers, particularly business customers, are located close together. Irrespective of the incumbent company, and irrespective of the general type of collocation arrangement, Table 8.3 indicates that operational collocation arrangements are located in incumbent company facilities from which a larger share of the incumbent's business than its residential switched access lines were served.

Table 8.3 also sheds light on the potential competitive effects of collocation arrangements. Assuming competitors can afford to expand their collocation arrangements at the incumbent company locations where they had operational collocation arrangements at the end of 1997, and also assuming sufficient additional physical space is available at those locations, Table 8.3 suggests that new local competitors could -- from those locations -- compete to serve between 10 and 39 percent of the incumbent telephone company's total residential switched access lines (depending on the incumbent company) and between 20 and 57 percent of the incumbent's total non-residential (principally business) switched access lines.

Unbundled Local Loops and Retail Services Purchased, at Discount, for Resale

The Telecommunications Act of 1996 seeks to facilitate local telephone service competition by providing two alternatives to competing by building a local telephone network "from scratch." Section 251 of the 1996 Act requires incumbent local telephone companies, except certain rural telephone companies, to allow competitors to lease elements of incumbent company networks, on an unbundled basis, and to purchase incumbent company retail services, at discounted prices, for resale to customers of competitors. Leasing unbundled network elements -- such as the "local loop" that connects directly to a telephone customer's home or place of business -- and resale of incumbent telephone company services under one's own brand name may be relatively low cost ways to get started as a local telephone service competitor, or for a competitor to start expanding the area served by the local telephone network it has constructed. These two alternatives, moreover, may be relatively low cost means for a competitor to serve residential customers, in particular.

TABLE 8.2
COMPETITOR COLLOCATION ARRANGEMENTS
WITH INCUMBENT TELEPHONE COMPANIES
(as Reported by Incumbent Companies)

Company	Number of Incumbent Telephone Company Central Offices with One or More Collocation Arrangements		Number of Competitors with One or More Collocation Arrangements	
	1995	1997	1995	1997
Ameritech	16	87	5	11
Bell Atlantic	19	98	5	14
BellSouth	15	124	13	17
GTE	32	53	9	17
NYNEX	41	78	10	12
Pacific Telesis	42	82	9	16
SBC	9	32	5	8
U S WEST	2	57	2	11

Source: Incumbent local telephone company ex parte filings in CC Docket No. 91-141, In the Matter of Expanded Interconnection with Local Telephone Company Facilities.

TABLE 8.3
PERCENT OF INCUMBENT ACCESS LINES SERVED BY FACILITIES
AT WHICH LOCAL SERVICE COMPETITORS HAVE
OPERATIONAL COLLOCATION ARRANGEMENTS: 12/31/97

Company	Percent of Residential Lines Served		Percent of Other Lines Served	
	Type of Collocation		Type of Collocation	
	Some/All	Only	Some/All	Only
Ameritech	21	18	37	20
Bell Atlantic	17	6	37	7
BellSouth	6	14	14	24
GTE	6	4	14	12
SBC	22	1	34	5
Sprint	1	13	1	19
U S WEST	24	6	41	8

Source: Local competition surveys voluntarily filed by nine large incumbent companies. Public versions of the surveys (covering all states except Alaska, plus the District of Columbia) are posted on the Internet at http://www.fcc.gov/ccb/local_competition.

- * The survey asked for information about incumbent telephone company facilities at which "at least one competing wireline carrier had an operational physical collocation arrangement." (An operational virtual collocation arrangement might also be present at that facility.)
- ** The survey asked for information about incumbent telephone company facilities at which "at least one competing wireline carrier had an operational virtual collocation arrangement, but where no carriers had physical collocation arrangements."

A recent survey of nine large incumbent local telephone companies provides data on CLEC purchases of unbundled local loops and incumbent company retail services for resale to customers. The data, summarized in Table 8.4, suggest that CLECs prefer reselling incumbent company retail services to using unbundled local loops as a way to enter, or expand service in, local telephone markets. About 1.7 million telephone lines were being served by CLECs reselling incumbent company switched telephone services at the end of 1997, whereas fewer than 160,000 lines were being served by CLECs using incumbent company unbundled local loops, according to the survey. For an order-of-magnitude comparison, consider that the incumbent local telephone companies in the survey provided almost 160 million switched access lines at the end of 1997. Moreover, while 8 states had at least 15 CLEC resellers in operation, fewer than 10 states had as many as 5 CLECs using incumbent company unbundled local loops. Table 8.4 also shows that the use of unbundled loops by CLECs was geographically limited at the end of 1997.

TABLE 8.4
COMPETITOR USE OF INCUMBENT COMPANY
FACILITIES AND SERVICES: 12/31/97

	Unbundled local loops (with or without incumbent switching)	Retail switched services bought at discount for resale to competitor's customers
Competitor customer lines served by means of:	fewer than 160,000	about 1,700,000

	5 or more competitors buying unbundled local loops	15 or more competitors buying incumbent retail services for resale
Number of states with:	fewer than 10	8

	Unbundled local loops reported:			
	0	100 or fewer	Over 100 and under 10,000	Over 10,000
Number of states:	16	12	16	6

Source: Local competition surveys voluntarily filed by 9 large incumbent companies. Public versions of the surveys (covering all states except Alaska, plus the District of Columbia) are posted on the Internet at http://www.fcc.gov/ccb/local_competition.

LONG DISTANCE CARRIERS:

Carrier identification codes provide information on the number of firms seeking to acquire certain types of interconnecting arrangements with local telephone companies. Any firm that seeks to use trunk-side connections with local telephone companies is provided a carrier identification code so that traffic can be efficiently routed.

Beginning in 1986, a number of corporations, government agencies and other organizations began to acquire carrier identification codes for their own use, rather than for the purpose of providing telecommunications services to others. After that time, the use of such codes to estimate the number of long distance carriers became less reliable. We believe, however, that the number of firms obtaining these codes provides the best information available on the entry of new firms into the long distance market prior to 1986. The number of codes assigned is shown in Table 9.1.

Carrier identification codes are currently assigned by the North American Numbering Plan Administration (NANPA), which is part of Lockheed Martin IMS. Further information on such codes can be found on the internet at <http://www.nanpa.com> on the World Wide Web.

The number of long distance carriers more than tripled from 1986 to 1996. Table 9.2 shows the number of long distance carriers by state. The information for 1986-1988 was summarized from information supplied to the Commission by the Bell operating companies on companies purchasing equal access from them. The information for 1989-1996 comes from the National Exchange Carrier Association's database on presubscribed lines. Combining these two databases may result in some discontinuity between 1988 and 1989.

Table 9.3 shows several alternative measures of long distance carrier development.

TABLE 9.1

**NUMBER OF CARRIER IDENTIFICATION CODES (CICs)
ASSIGNED BY
BELL COMMUNICATIONS RESEARCH
1982 - 1992**

YEAR	QUARTER	NUMBER OF CICS ASSIGNED	YEAR	QUARTER	NUMBER OF CICS ASSIGNED
1982	FIRST QUARTER	11	1988	FIRST QUARTER	602
	SECOND QUARTER	13		SECOND QUARTER	621
	THIRD QUARTER	13		THIRD QUARTER	601
	FOURTH QUARTER	11		FOURTH QUARTER	639
1983	FIRST QUARTER	15	1989	FIRST QUARTER	685
	SECOND QUARTER	25		SECOND QUARTER	714
	THIRD QUARTER	33		THIRD QUARTER	730
	FOURTH QUARTER	42		FOURTH QUARTER	747
1984	FIRST QUARTER	54	1990	FIRST QUARTER	774
	SECOND QUARTER	86 *		SECOND QUARTER	794
	THIRD QUARTER	121		THIRD QUARTER	817
	FOURTH QUARTER	155		FOURTH QUARTER	791
1985	FIRST QUARTER	182	1991	FIRST QUARTER	745
	SECOND QUARTER	212		SECOND QUARTER	766
	THIRD QUARTER	236		THIRD QUARTER	783
	FOURTH QUARTER	256		FOURTH QUARTER	807
1986	FIRST QUARTER	276	1992	FIRST QUARTER	786
	SECOND QUARTER	331		SECOND QUARTER	831
	THIRD QUARTER	361		THIRD QUARTER	840
	FOURTH QUARTER	413		FOURTH QUARTER	886
1987	FIRST QUARTER	444			
	SECOND QUARTER	495			
	THIRD QUARTER	530			
	FOURTH QUARTER	573			

**NUMBER OF CARRIER IDENTIFICATION CODES (CICs)
ASSIGNED BY
BELL COMMUNICATIONS RESEARCH
1993 - 1998**

YEAR	QUARTER	FGB	FGD
1993	FIRST QUARTER	694 **	709
	SECOND QUARTER	738	746
	THIRD QUARTER	739	760
	FOURTH QUARTER	753	796
1994	FIRST QUARTER	781	815
	SECOND QUARTER	795	845
	THIRD QUARTER	805	899***
	FOURTH QUARTER	819	947
1995	FIRST QUARTER	829	1,016
	SECOND QUARTER	832	1,082
	THIRD QUARTER	843	1,146
	FOURTH QUARTER	852	1,209
1996	FIRST QUARTER	865	1,253
	SECOND QUARTER	876	1,300
	THIRD QUARTER	875	1,315
	FOURTH QUARTER	878	1,337
1997	FIRST QUARTER	882	1,395
	SECOND QUARTER	896	1,427
	THIRD QUARTER	908	1,481
	FOURTH QUARTER	909	1,538
1998	FIRST QUARTER	917	1,596

* CONVERSION FROM 2-DIGIT CODES TO 3-DIGIT CODES.

** CONVERSION FROM 3-DIGIT CODES TO 4-DIGIT CODES.

*** INCLUDES BOTH 3-DIGIT CODES AND 4-DIGIT CODES.

TABLE 9.2
NUMBER OF LONG DISTANCE CARRIERS BY STATE

STATE	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996
ALABAMA	13	15	15	15	12	17	17	17	30	45	68
ALASKA	*	*	*	2	2	2	2	2	2	2	2
ARIZONA	18	16	19	23	28	30	38	46	50	70	95
ARKANSAS	6	7	9	15	16	14	15	17	23	39	64
CALIFORNIA	22	22	32	30	34	40	54	61	63	81	100
COLORADO	19	20	24	25	27	32	37	42	56	72	96
CONNECTICUT	*	*	*	17	13	13	18	23	34	46	65
DELAWARE	4	4	4	13	20	24	27	28	38	54	70
DISTRICT OF COLUMBIA	13	20	25	22	21	21	20	20	26	24	24
FLORIDA	20	23	26	25	27	57	57	44	86	117	154
GEORGIA	14	19	19	20	19	38	41	29	60	78	108
HAWAII	*	*	*	6	8	33	9	11	15	20	31
IDAHO	7	7	10	13	11	16	18	24	28	40	56
ILLINOIS	19	23	28	26	26	30	32	42	56	70	108
INDIANA	15	15	21	19	22	21	19	21	27	36	83
IOWA	9	9	11	17	13	16	17	18	26	42	67
KANSAS	14	14	18	15	12	16	16	18	26	44	72
KENTUCKY	11	10	17	20	19	21	20	20	29	48	81
LOUISIANA	20	18	21	22	23	30	35	27	48	66	97
MAINE	4	6	5	8	9	10	9	14	20	31	61
MARYLAND	12	13	18	25	23	22	23	24	31	29	30
MASSACHUSETTS	10	8	17	15	17	18	20	24	34	56	91
MICHIGAN	14	13	20	22	22	29	26	36	37	60	88
MINNESOTA	14	14	21	24	22	22	24	26	37	53	78
MISSISSIPPI	6	9	14	16	15	16	15	14	22	46	66
MISSOURI	20	21	26	22	19	23	28	26	39	56	90
MONTANA	6	4	5	11	10	10	18	21	24	33	51
NEBRASKA	11	10	12	18	18	15	16	13	20	33	57
NEVADA	7	9	14	17	15	19	19	18	25	26	52
NEW HAMPSHIRE	3	5	6	8	10	10	11	15	23	34	65
NEW JERSEY	20	20	26	30	33	38	38	46	65	87	113
NEW MEXICO	5	6	13	20	22	25	28	30	37	48	66
NEW YORK	22	22	27	28	30	36	38	46	68	99	128
NORTH CAROLINA	12	10	14	15	13	19	24	14	33	38	73
NORTH DAKOTA	6	6	8	10	12	12	15	17	22	29	49
OHIO	16	17	23	27	27	31	27	26	38	60	75
OKLAHOMA	12	14	16	20	21	27	29	32	45	59	88
OREGON	19	16	13	17	17	26	33	34	38	58	77
PENNSYLVANIA	18	26	30	34	31	31	45	50	59	84	112
RHODE ISLAND	8	7	8	12	11	13	14	18	21	31	63
SOUTH CAROLINA	7	7	10	14	13	22	24	24	25	42	63
SOUTH DAKOTA	4	4	6	13	9	10	12	19	25	39	50
TENNESSEE	14	15	20	27	26	32	29	28	48	74	106
TEXAS	50	64	74	68	63	74	82	98	110	121	159
UTAH	10	9	15	17	16	18	20	28	36	55	68
VERMONT	3	5	6	7	8	8	9	15	18	29	51
VIRGINIA	9	11	12	23	21	24	23	23	31	38	58
WASHINGTON	19	15	15	22	23	35	37	39	42	62	86
WEST VIRGINIA	6	5	7	13	10	12	14	13	17	22	32
WISCONSIN	25	25	27	29	28	25	23	20	25	38	79
WYOMING	6	4	5	8	7	10	13	16	23	34	45
UNITED STATES	210	239	266	302	320	383	408	429	506	579	616
NORTHERN MARIANA ISLANDS	*	*	*	*	*	*	*	2	2	2	3
PUERTO RICO	*	*	*	1	10	10	10	8	10	10	9
VIRGIN ISLANDS	*	*	*	1	1	1	6	6	5	5	5
GRAND TOTAL	210	239	266	302	325	388	414	436	511	583	621

Sources: *Summary of Long Distance Carriers* (for 1986-1988) and National Exchange Carrier Association PSI Database (for 1989-1996)

*Data not available.

**The estimate for the number of long distance carriers serving a state from 1989 to 1996 equals the number of long distance carriers from the local study area with the maximum number of long distance carriers.

TABLE 9.3

ALTERNATIVE MEASURES OF LONG DISTANCE CARRIER DEVELOPMENT

YEAR	MONTH	CARRIERS WITH PRESUBSCRIBED LINES	CARRIERS PURCHASING EQUAL ACCESS 1/	FIRMS WITH CARRIER IDENTIFICATION CODES	FIRMS PURCHASING ACCESS	CARRIERS FILING TRS FORM 2/
1986	MARCH	*	169	231	*	*
	JUNE	*	183	276	*	*
	SEPTEMBER	*	190	302	506	*
	DECEMBER	*	210	334	533	*
1987	MARCH	*	211	360	561	*
	JUNE	*	213	397	*	*
	SEPTEMBER	*	224	421	*	*
	DECEMBER	223	239	451	540	*
1988	MARCH	*	238	471	511	*
	JUNE	242	248	489	519	*
	SEPTEMBER	*	256	464	506	*
	DECEMBER	253	266	493	510	*
1989	MARCH	*	274	520	519	*
	JUNE	276	287	544	*	*
	SEPTEMBER	*	304	560	*	*
	DECEMBER	302	318	577	514	*
1990	MARCH	*	289	594	512	*
	JUNE	314	288	611	506	*
	SEPTEMBER	*	304	636	511	*
	DECEMBER	325	304	601	499	*
1991	MARCH	*	306	571	505	*
	JUNE	355	327	597	542	*
	SEPTEMBER	*	337	605	538	*
	DECEMBER	388	351	631	576	*
1992	MARCH	*	361	616	595	*
	JUNE	425	370	659	577	*
	SEPTEMBER	*	379	654	587	*
	DECEMBER	414	394	692	599	*
1993	MARCH	*	*	*	*	*
	JUNE	412	401	*	*	*
	SEPTEMBER	*	401	*	*	*
	DECEMBER	436	420	*	*	321
1994	MARCH	*	433	*	*	*
	JUNE	454	444	*	*	*
	SEPTEMBER	*	458	*	*	*
	DECEMBER	511	465	*	*	366
1995	MARCH	*	*	*	*	*
	JUNE	549	*	*	*	*
	SEPTEMBER	*	*	*	*	*
	DECEMBER	583	*	*	*	453
1996	MARCH	*	*	*	*	*
	JUNE	582	*	*	*	*
	SEPTEMBER	*	*	*	*	*
	DECEMBER	621	*	*	*	562

* DATA NOT AVAILABLE

1/ DATA FOR THE PERIODS PRIOR TO MARCH 1990 INCLUDE A SMALL NUMBER OF FIRMS PURCHASING EQUAL ACCESS THAT WERE NOT CARRIERS.

2/ INCLUDES INTEREXCHANGE CARRIERS, OPERATOR SERVICE PROVIDERS, OTHER TOLL CARRIERS, PAY CARD PROVIDERS, AND RESELLERS.

LONG DISTANCE MARKET SHARES:

1. Minutes of Interstate Calling:

Measures of switched access minutes first became available in 1984. Such information is publicly available for the total industry and for AT&T but not for other long distance carriers. Thus, access minutes can be used to compute a market share for AT&T but not for smaller carriers.

Column 1 of Table 10.1 shows total interstate switched access minutes (which includes international) reported for all long distance carriers by the National Exchange Carrier Association (NECA). Interstate calling has grown steadily, with access minutes more than tripling, since these data were first measured in the third quarter of 1984. Overall economic growth, price reductions, and extensive advertising have contributed to this growth.

With few exceptions, terminating access minutes, which do not include dialing and call set-up time, equal long distance conversation minutes. Table 10.1, Column 2, shows the number of terminating interstate access minutes reported for all long distance carriers by NECA since 1986, when terminating minutes were first reported separately.

Columns 3 and 4 of Table 10.1 show AT&T's reported total access minutes and terminating access minutes. Columns 5 and 6 show the company's market share of total access minutes and terminating access minutes. Since mid-1984, AT&T's traffic has grown at a slower rate than the industry average: its minutes have doubled during that period while the minutes for other carriers have increased tenfold. As a result, AT&T's share of long distance access minutes has fallen sharply.

2. Presubscribed Lines:

A telephone line is said to be presubscribed to the long distance carrier that receives the ordinary long distance calls placed on that line. Where equal access is available, each customer is asked to choose a long distance carrier. Thereafter, all of the customer's long distance calls will be routed to the chosen long distance carrier unless the customer alters normal dialing procedure -- for example, by dialing special codes to access an alternate long distance carrier. Where equal access is not yet available, the use of long distance carriers other than AT&T usually requires alternative dialing procedures.

In the past, NECA provided information on the number of lines presubscribed to each long distance carrier. NECA collected the information from each local telephone company in order to comply with previous FCC rules that required NECA to recover certain expenses from the larger long distance carriers. This information is shown in Table 10.2. Following passage of the

Telecommunications Act of 1996, the FCC changed its universal service rules, which previously required the collection of this information. As a result, information for December 1996 is the last presubscribed line data collected by NECA.

NECA reports that, at the end of 1996, there were 159 million presubscribed lines in the United States. Special access lines, WATS lines, and other specialized lines are not included in the counts of presubscribed lines. The number of lines presubscribed to AT&T has remained roughly constant while the number of lines presubscribed to other carriers has grown. Table 10.3 shows that at the end of 1996, about 63% of these lines were presubscribed to AT&T, 15% to MCI, 7% to Sprint, and about 3% to Worldcom. About six hundred smaller carriers, serving almost 19 million lines, account for the remaining 12% of the industry. Table 10.4 shows the market share of presubscribed lines by state for AT&T, MCI, Sprint, WorldCom and Excel.

In recent years, many smaller incumbent local exchange carriers (ILECs) have entered the long distance market. Table 10.5 shows the number of ILECs with presubscribed lines in their own service areas, the number of study areas in which serving ILECs have presubscribed lines, and the ILECs' share of presubscribed lines in these areas.¹ In 1996, GTE began to offer long distance service. As a result, by the end of 1996 the number of lines located in areas where a customer could select a long distance carrier affiliated with the local telephone company increased to more than 30 million.

Table 10.6 shows the distribution of ILECs providing long distance service by the number of their own study areas in which they provided service. In 1989, only one ILEC provided long distance service in three or more of its study areas. By year-end 1996, this number had increased to six. These six ILECs provided long distance service in 186 study areas.

Table 10.7 shows the average ILEC share of the long distance market by the year that the ILEC began offering long distance service. Average ILEC market share is 15% in the first year. In the fourth year, ILEC market share is 23% among ILECs that have provided service for at least four years.

3. Toll Revenues:

The largest long distance telephone companies are required to report their annual revenues to the FCC. The revenues for reporting carriers and the total industry are shown in Table 10.8, and include both interstate and intrastate revenues. Table 10.9 shows market shares based on annual revenues for long distance carriers. Market shares for all competitors in the long distance market (including both long distance companies and local companies) are shown in Table 10.10.

¹A study area is a local exchange carrier's operations in a given state.

In 1997, services provided by long distance carriers generated about \$89 billion in revenues. During the past few years, revenues have grown at a far slower pace than the volume of long distance calling because of sharp price cuts. In 1984, AT&T's toll revenues of \$35 billion accounted for 90% of the revenues received by all long distance carriers. By 1997, with its revenues having increased by 12%, its share of total revenues had fallen to about 45%.

Chart 10.1 compares alternative measures of AT&T's market share using minutes, lines, and revenues. In this chart, a second measure of revenues has been added. The alternative measure is based on financial reports to stockholders. Revenues reported to the FCC usually differ from revenues reported to stockholders. The largest differences tend to relate to the treatment of access charges and international settlements, which accounts for the difference between the annual revenue share points labeled "FCC" and the revenue share line labeled "SEC."

TABLE 10.1
INTERSTATE SWITCHED ACCESS MINUTES
(FIGURES SHOWN IN BILLIONS)

	TOTAL INDUSTRY		AT&T		AT&T'S SHARE OF	
	ACCESS MINUTES	TERMINATING MINUTES	ACCESS MINUTES	TERMINATING MINUTES	ACCESS MINUTES	TERMINATING MINUTES
1984 THIRD QUARTER	37.5		31.6	18.1	84.2 %	
FOURTH QUARTER	39.6		31.8	18.2	80.2	
1985 FIRST QUARTER	39.6		32.8	19.0	83.0	
SECOND QUARTER	41.5		33.3	19.2	80.3	
THIRD QUARTER	42.8		33.8	19.4	78.9	
FOURTH QUARTER	43.3		33.4	19.2	77.1	
TOTAL 1985	167.1		133.3	77.0	79.8	
1986 FIRST QUARTER	43.0		34.2	19.9	79.5	
SECOND QUARTER	44.8		34.7	20.2	77.5	
THIRD QUARTER	46.7	26.7	35.8	20.7	76.6	77.7 %
FOURTH QUARTER	48.5	27.6	35.9	20.6	74.0	74.7
TOTAL 1986	183.1		140.6	81.5	76.8	
1987 FIRST QUARTER	51.2	28.9	37.4	21.4	72.9	74.2
SECOND QUARTER	52.5	29.7	38.6	22.1	73.7	74.2
THIRD QUARTER	55.0	30.9	39.2	22.3	71.2	72.1
FOURTH QUARTER	57.0	32.3	40.1	22.6	70.4	70.1
TOTAL 1987	215.7	121.8	155.3	88.4	72.0	72.6
1988 FIRST QUARTER	59.0	33.4	41.2	23.3	69.8	69.9
SECOND QUARTER	59.6	33.6	41.1	23.0	69.0	68.5
THIRD QUARTER	62.1	34.9	42.3	23.6	68.2	67.6
FOURTH QUARTER	64.0	35.9	43.0	23.6	67.2	65.8
TOTAL 1988	244.6	137.8	167.6	93.6	68.5	67.9
1989 FIRST QUARTER	66.2	37.3	44.2	24.5	66.8	65.7
SECOND QUARTER	68.5	38.1	44.4	24.5	64.8	64.4
THIRD QUARTER	69.7	38.6	44.9	24.7	64.4	64.1
FOURTH QUARTER	72.6	40.0	46.4	25.3	63.9	63.3
TOTAL 1989	277.1	153.9	179.9	99.0	64.9	64.3
1990 FIRST QUARTER	74.7	41.2	47.1	25.8	63.0	62.5
SECOND QUARTER	75.8	41.9	47.1	25.7	62.1	61.5
THIRD QUARTER	77.9	43.4	48.7	26.4	62.5	60.9
FOURTH QUARTER	79.1	43.1	49.8	27.8	63.0	64.5
TOTAL 1990	307.4	169.6	192.6	105.8	62.6	62.4
1991 FIRST QUARTER	79.2	43.4	49.9	27.1	63.0	62.4
SECOND QUARTER	81.9	44.9	50.5	26.8	61.7	59.6
THIRD QUARTER	82.6	45.1	51.2	27.1	61.9	60.1
FOURTH QUARTER	84.4	46.4	52.4	27.9	62.1	60.0
TOTAL 1991	328.0	179.8	204.0	108.8	62.2	60.5
1992 FIRST QUARTER	85.6	47.7	53.3	28.6	62.2 %	59.9 %
SECOND QUARTER	86.5	48.2	51.9	27.9	60.0	57.8
THIRD QUARTER	87.9	49.1	53.0	28.4	60.3	57.9
FOURTH QUARTER	89.8	50.4	53.5	28.8	59.7	57.1
TOTAL 1992	349.7	195.4	211.7	113.6	60.5	58.2

TABLE 10.1
INTERSTATE SWITCHED ACCESS MINUTES -- CONTINUED
(FIGURES SHOWN IN BILLIONS)

	TOTAL INDUSTRY		AT&T		AT&T'S SHARE OF	
	ACCESS MINUTES	TERMINATING MINUTES	ACCESS MINUTES	TERMINATING MINUTES	ACCESS MINUTES	TERMINATING MINUTES
1993 FIRST QUARTER	90.6	51.0	55.5	29.7	61.3	58.1
SECOND QUARTER	91.2	51.9	55.0	29.9	60.3	57.6
THIRD QUARTER	93.6	54.8	56.3	31.4	60.2	57.2
FOURTH QUARTER	95.9	56.4	56.8	31.9	59.3	56.6
TOTAL 1993	371.2	214.1	223.6	122.8	60.2	57.4
1994 FIRST QUARTER	98.7	58.2	59.0	31.4	59.8	53.9
SECOND QUARTER	97.9	58.3	57.7	31.1	59.0	53.3
THIRD QUARTER	101.9	60.9	58.5	32.6	57.4	53.5
FOURTH QUARTER	102.9	62.0	59.5	33.3	57.9	53.6
TOTAL 1994	401.4	239.4	234.7	128.3	58.5	53.6
1995 FIRST QUARTER	105.6	63.8	59.9	33.6	56.7	52.7
SECOND QUARTER	106.8	64.7	59.3	33.5	55.5	51.8
THIRD QUARTER	109.0	66.7	59.8	34.4	54.8	51.6
FOURTH QUARTER	110.6	67.5	60.8	34.6	55.0	51.2
TOTAL 1995	431.9	262.7	239.8	136.1	55.5	51.8
1996 FIRST QUARTER	115.7	71.2	62.4	35.9	54.0	50.5
SECOND QUARTER	114.7	71.5	60.2	35.1	52.4	49.0
THIRD QUARTER	117.8	74.1	60.7	35.5	51.5	48.0
FOURTH QUARTER	120.7	76.4	61.7	35.6	51.1	46.6
TOTAL 1996	468.9	293.2	244.9	142.1	52.2	48.5
1997 FIRST QUARTER	122.5	76.9	63.9	37.1	52.1	48.3
SECOND QUARTER	124.9	79.4	63.2	37.1	50.6	46.7
THIRD QUARTER	125.4	79.5	65.3	38.6	52.1	48.5
FOURTH QUARTER	126.3	80.6	64.1	37.4	50.9	46.8
TOTAL 1997	499.1	316.5	256.5	150.2	51.4	47.5
1998 FIRST QUARTER	130.1	87.1	65.9	39.1	50.7	44.9

Note: Switched access minutes are those minutes transmitted by long distance carriers that also use the distribution networks of local telephone companies. The measure includes minutes associated with ordinary long distance calls and the "open end" of WATS-Like calls. It excludes calls made on private telecommunications systems, on leased lines, and minutes on the "closed end" of WATS-Like calls.

Source: Industry Analysis Division, Long Distance Market Shares.

TABLE 10.2

PRESUBSCRIBED TELEPHONE LINES BY CARRIER

	DEC 96	JUNE 96	DEC 95	JUNE 95	DEC 94	JUNE 94
TOTAL NUMBER OF CARRIERS WITH PRESUBSCRIBED LINES	621	582	583	549	511	454
TOTAL NUMBER OF QUALIFYING CARRIERS	45	43	44	36	35	29
TOTAL NUMBER OF NON-QUALIFYING CARRIERS	576	539	539	513	476	425
QUALIFYING COMPANIES 1/						
AT&T COMPANIES:						
AT&T COMMUNICATIONS	100,177,257	99,599,355	101,138,792	102,502,271	103,957,425	102,421,583
AT&T ALASCOM, INC. 2/	224,192	222,144	218,135	232,525	226,974	222,142
MCI TELECOMMUNICATIONS CORP.	22,938,608	24,338,086	23,911,437	23,459,534	22,040,062	22,286,410
SOUTHERNET						
TELECOM*USA						
TELECONNECT						
SPRINT	11,788,717	10,905,940	9,784,388	9,589,788	9,467,999	9,244,159
LA CONEXION FAMILIAR, INC.						
LONG DISTANCE/USA						
WORLDCOM 3/	4,297,498	4,110,753	4,088,816	3,683,433	1,954,198	1,831,304
ADVANCED TELECOM CORP. (ATC)						
AMERICAN NETWORK						
CLAYDESTA DIGITAL						
COM SYSTEMS DBA SUN DIAL						
ITT						
METROMEDIA						
MICROTEL						
MID-AMERICAN						
NATIONAL TELECOMMUNICATIONS						
NTS (NATIONAL TELEPHONE SYSTEMS)						
TELUS/TELTEC SAVING						
TOUCH-1 LONG DISTANCE					320,571	161,143
WILTEL 4/					960,004	677,430
MFS INTELENET, INC.	211,085	177,648	106,489			
EXCEL TELECOMMUNICATIONS, INC.	3,792,171	3,313,287	1,486,953	223,235	75,543	
LCI COMPANIES:						
LCI INTERNATIONAL/LITEL 5/	2,244,192	1,965,532	1,227,925	840,968	638,464	614,937
LCI CORPORATE TELEMAGEMENT GROUP			85,868			
LCI/US SIGNAL CORP. 6/			128,305	121,445	114,026	
FRONTIER COMPANIES: 7/	2,050,019	2,097,182	2,348,301			
FRONTIER dba ALLNET COMM. SVC., INC. 8/	(1,334,100)	(1,317,313)	(1,548,658)	1,650,296	1,334,360	1,078,577
FRONTIER COMMUNICATIONS INT'L 9/	(488,074)	(441,493)	(436,609)	365,841	283,372	278,542
FRONTIER COMM-NORTH CENTRAL REGION 10/	(134,721)	(150,661)	(161,242)	154,038	132,946	
FRONTIER OF THE GREAT LAKES 11/	(93,124)	(97,277)	(95,633)	88,043	84,141	80,573
FRONTIER OF THE WEST 12/		(90,438)	(106,159)	133,300	137,489	144,240
SNET AMERICA LONG DISTANCE	783,135	597,251	304,391	223,844	105,855	
GTE LONG DISTANCE CO.	733,558	169,609				
CABLE & WIRELESS COMMUNICATIONS	625,367	584,802	543,617	524,014	524,153	537,919
TELEFONICA LARGA DISTANCIA	470,267	458,783	452,017	444,205	441,467	446,390
U.S. LONG DISTANCE/ZERO PLUS	356,932	276,153	212,611	149,308	116,602	
UNITED TELEPHONE LONG DISTANCE	289,380	471,687	517,379	545,189	572,010	612,991
TOUCH 1 COMMUNICATIONS	209,905	149,392	134,779	108,550		
CITIZENS TELECOM	206,698	141,636				
LONG DISTANCE SAVERS	185,247	170,359	158,001	151,473	141,697	128,716
BUSINESS TELECOM, INC. (BTI)	177,423	171,239	146,118	132,196	121,822	100,808
INTER CONTINENTAL TELEPHONE	160,084	117,780	134,572	120,932	99,033	84,534
L.D. SERVICES, INC.	143,601	116,239	99,557	90,774		
COASTAL TELEPHONE COMPANY	141,358	133,108	97,917			
NATIONAL TELEPHONE COMMUNICATIONS, INC.	139,185					
VARTEC TELECOM, INC.	137,594	116,898	120,832	136,568	122,991	130,738
CINCINNATI BELL LONG DISTANCE INC.	134,506	120,710	115,398	102,634	102,163	92,302
GENERAL COMMUNICATIONS, INC.	130,994	124,969	119,883	102,813	102,528	102,202
ALLTEL LONG DISTANCE	127,563	78,401				
SWITCHED SERVICES COMMUNICATIONS 13/	126,721					
TELAMERICA, INC.	124,628	122,093	115,403	109,463	105,053	100,282
ATX TELECOMMUNICATIONS SERVICES	122,297	119,843	118,637	113,466	107,979	110,023
ONE CALL COMMUNICATIONS	120,952	110,352	93,613	78,328		
AMERIVISION COMMUNICATIONS	117,120					
CENTURY AREA LONG LINES	116,708	104,143				
ACCESS LONG DISTANCE	107,423	101,914	90,562	81,438		
OCI (ONCOR)	106,742	116,046	128,209	148,918	161,085	163,972
INTERNATIONAL TELECHARGE						
COMMONWEALTH LONG DISTANCE (CLD)	103,421	109,349	139,414	146,663	147,045	125,682
AMERICAN TELCO, INC.	99,806	89,783	83,402			
TWT-HEARTLINE	97,531	118,455	117,739			72,803
ACC LONG DISTANCE CORPORATION	87,667	80,795	79,652		74,482	
MATRIX TELECOM	85,971	89,689	91,031			
TRESCOM INTERNATIONAL, INC.	84,766					
DELTACOM L.D.S.	83,580					
WINSTAR GATEWAY NETWORK, INC		109,991	86,652			
MIDCOM COMMUNICATIONS		79,472	81,386	102,076		
COMMUNIQUE TELECOM					188,295	197,874
WORLDXCHANGE 14/			140,610	127,839	156,055	79,270
CHERRY COMMUNICATIONS			104,367	93,746		
LINTEL (LINCOLN)			79,281	81,010	85,496	88,136
SONIC COMMUNICATIONS 15/					114,041	
TELESPHERE NETWORK 15/						
PUERTO RICO TEL-COM						
NETECH COMM, US WEST						
TOTAL QUALIFYING CARRIERS	154,461,869	152,080,868	149,232,439	146,960,164	145,317,426	142,215,682
NON-QUALIFYING CARRIERS	4,210,374	3,920,356	3,368,738	3,384,888	3,161,902	3,013,060
TOTAL INDUSTRY PRESUBSCRIBED LINES	158,672,243	156,001,224	152,601,177	150,345,052	148,479,328	145,228,742

SEE NOTES FOLLOWING TABLE 10.7

TABLE 10.2

PRESUBSCRIBED TELEPHONE LINES BY CARRIER -- CONTINUED

	DEC 93	JUNE 93	DEC 92	JUNE 92	DEC 91	JUNE 91
TOTAL NUMBER OF CARRIERS WITH PRESUBSCRIBED LINES	436	412	414	425	388	355
TOTAL NUMBER OF QUALIFYING CARRIERS	27	28	28	24	22	24
TOTAL NUMBER OF NON-QUALIFYING CARRIERS	409	384	386	401	366	331
QUALIFYING COMPANIES 1/						
AT&T COMPANIES:						
AT&T COMMUNICATIONS	101,711,178	101,770,741	101,203,888	101,384,413	101,498,260	101,013,529
AT&T ALASCOM, INC. 2/	216,964	218,225	209,850	203,832	203,105	196,244
MCI TELECOMMUNICATIONS CORP.	21,818,212	21,170,832	20,167,298	19,189,649	18,329,870	17,603,453
SOUTHERNET						
TELECOM*USA						
TELECONNECT						
SPRINT	9,212,993	8,621,177	8,856,004	8,424,303	8,353,583	8,702,085
LA CONEXION FAMILIAR, INC.			71,327	72,555		
LONG DISTANCE/USA						
WORLDCOM 3/	1,752,616	931,553	482,043	338,820	332,244	134,043
ADVANCED TELECOM CORP. (ATC)			440,961	331,136	333,152	334,157
AMERICAN NETWORK						
CLAYDESTA DIGITAL						
COM SYSTEMS DBA SUN DIAL		134,950	126,190	117,571	116,326	119,034
ITT						
METROMEDIA		538,362	494,864	468,698	476,128	497,187
MICROTEL						
MID-AMERICAN						
NATIONAL TELECOMMUNICATIONS						91,417
NTS (NATIONAL TELEPHONE SYSTEMS)						
TELUS/TELTEC SAVING						
TOUCH-1 LONG DISTANCE	98,044	105,244	110,929			
WILTEL 4/	432,844	339,960	191,076	116,501	87,758	
MFS INTELENET, INC.						
EXCEL TELECOMMUNICATIONS, INC.						
LCI COMPANIES:						
LCI INTERNATIONAL/LITEL 5/	405,644	359,575	338,496	226,350	186,884	163,089
LCI CORPORATE TELEMANAGEMENT GROUP						
LCI/US SIGNAL CORP. 6/	109,071	93,155	77,096			
FRONTIER COMPANIES: 7/						
FRONTIER dba ALLNET COMM. SVC., INC. 8/	891,577	846,961	859,499	830,548	813,748	775,847
FRONTIER COMMUNICATIONS INT'L 9/	279,304	260,760	252,495	240,670	190,382	180,321
FRONTIER COMM-NORTH CENTRAL REGION 10/						
FRONTIER OF THE GREAT LAKES 11/	77,699	76,521	71,059			
FRONTIER OF THE WEST 12/	96,539					
SNET AMERICA LONG DISTANCE						
GTE LONG DISTANCE CO.						
CABLE & WIRELESS COMMUNICATIONS	529,398	522,112	513,419	490,228	466,935	448,951
TELEFONICA LARGA DISTANCIA	442,922	436,695	432,701	425,334	419,293	393,034
U.S. LONG DISTANCE/ZERO PLUS						
UNITED TELEPHONE LONG DISTANCE	648,131	625,831	639,341	626,850	596,114	590,187
TOUCH 1 COMMUNICATIONS						
CITIZENS TELECOM						
LONG DISTANCE SAVERS	112,905	98,514	87,687	80,839	77,568	73,696
BUSINESS TELECOM, INC. (BTI)	79,396					
INTER CONTINENTAL TELEPHONE						
L.D. SERVICES, INC.						
COASTAL TELEPHONE COMPANY						
NATIONAL TELEPHONE COMMUNICATIONS, INC.						
VARTEC TELECOM, INC.	117,692	77,258				
CINCINNATI BELL LONG DISTANCE INC.	93,659	93,014	90,841	85,974	79,182	74,387
GENERAL COMMUNICATIONS, INC.	99,911	91,812	97,798	94,229	93,233	90,252
ALLTEL LONG DISTANCE						
SWITCHED SERVICES COMMUNICATIONS 13/						
TELAMERICA, INC.	94,114	92,719	92,860	91,460	85,801	90,887
ATX TELECOMMUNICATIONS SERVICES	104,971	86,186	82,303	70,246		
ONE CALL COMMUNICATIONS						
AMERIVISION COMMUNICATIONS						
CENTURY AREA LONG LINES						
ACCESS LONG DISTANCE						
OCI (ONCOR)	144,511	106,625	87,593			
INTERNATIONAL TELECHARGE					72,813	82,085
COMMONWEALTH LONG DISTANCE (CLD)	113,072	103,407	103,684	93,241		
AMERICAN TELCO, INC.						
TWT-HEARTLINE						
ACC LONG DISTANCE CORPORATION						
MATRIX TELECOM						
TRESCOM INTERNATIONAL, INC.						
DELTACOM L.D.S.						
WINSTAR GATEWAY NETWORK, INC						
MIDCOM COMMUNICATIONS						
COMMUNIQUE TELECOM	189,781	161,398	148,865	133,090	106,892	93,809
WORLDXCHANGE 14/						
CHERRY COMMUNICATIONS						
LINTEL (LINCOLN)	90,146	91,420	93,427	93,562	94,183	96,415
SONIC COMMUNICATIONS 15/						
TELESPHERE NETWORK 15/						94,666
PUERTO RICO TEL-COM						79,146
NETECH COMM, US WEST		107,063				
TOTAL QUALIFYING CARRIERS	139,963,294	138,162,070	136,423,594	134,230,099	133,013,454	132,017,921
NON-QUALIFYING CARRIERS	2,845,986	2,452,609	2,301,446	2,473,551	2,273,128	1,878,542
TOTAL INDUSTRY PRESUBSCRIBED LINES	142,809,280	140,614,679	138,725,040	136,703,650	135,286,582	133,896,463

SEE NOTES FOLLOWING TABLE 10.7

TABLE 10.2

PRESUBSCRIBED TELEPHONE LINES BY CARRIER -- CONTINUED

	DEC 90	JUNE 90	DEC 89	JUNE 89	DEC 88	JUNE 88	DEC 87
TOTAL NUMBER OF CARRIERS WITH PRESUBSCRIBED LINES	325	314	302	276	253	242	223
TOTAL NUMBER OF QUALIFYING CARRIERS	21	20	20	21	21	20	19
TOTAL NUMBER OF NON-QUALIFYING CARRIERS	304	294	282	255	232	222	204
QUALIFYING COMPANIES 1/							
AT&T COMPANIES:							
AT&T COMMUNICATIONS	100,061,611	99,612,725	99,396,609	100,006,827	100,205,677	100,832,869	101,652,678
AT&T ALASCOM, INC. 2/	182,341	179,175	168,095	165,332	161,572	157,250	152,040
MCI TELECOMMUNICATIONS CORP.	17,434,898	16,864,001	15,055,643	13,671,625	12,149,921	10,941,207	9,990,561
SOUTHERNET					215,384	199,093	183,769
TELECOM*USA		712,263	646,084	533,516			
TELECONNECT					247,042	211,949	156,614
SPRINT	8,743,988	8,148,013	8,167,638	7,674,605	7,197,136	6,382,372	5,836,179
LA CONEXION FAMILIAR, INC.							
LONG DISTANCE/USA						81,692	85,680
WORLDCOM 3/	116,864	70,781	66,576				
ADVANCED TELECOM CORP. (ATC)	355,518	372,260	396,319	262,542			
AMERICAN NETWORK							95,926
CLAYDESTA DIGITAL					96,914	78,804	71,794
COM SYSTEMS DBA SUN DIAL	118,963	118,225	89,081	87,520	62,773		
ITT		360,551	412,197	425,109	420,793	394,707	279,549
METROMEDIA	515,711	198,374	207,599	209,036	215,181	211,210	215,485
MICROTEL					70,273	63,587	
MID-AMERICAN				89,367	97,526	100,113	96,384
NATIONAL TELECOMMUNICATIONS							
NTS (NATIONAL TELEPHONE SYSTEMS)		67,129	77,667	65,692			
TELUS/TELTEC SAVING				134,150	125,339	117,191	105,243
TOUCH-1 LONG DISTANCE							
WILTEL 4/							
MFS INTELENET, INC.							
EXCEL TELECOMMUNICATIONS, INC.							
LCI COMPANIES:							
LCI INTERNATIONAL/LITEL 5/	144,926	137,164	123,748	107,302	92,014		
LCI CORPORATE TELEMAGEMENT GROUP							
LCI/US SIGNAL CORP. 6/							
FRONTIER COMPANIES: 7/							
FRONTIER dba ALLNET COMM. SVC., INC. 8/	744,452	709,876	677,531	687,097	763,680	818,080	726,974
FRONTIER COMMUNICATIONS INT'L 9/	171,198	150,069	113,329	98,334	83,383	63,574	
FRONTIER COMM-NORTH CENTRAL REGION 10/							
FRONTIER OF THE GREAT LAKES 11/							
FRONTIER OF THE WEST 12/							
SNET AMERICA LONG DISTANCE							
GTE LONG DISTANCE CO.							
CABLE & WIRELESS COMMUNICATIONS	422,534	407,906	394,020	358,290	304,976	256,786	236,000
TELEFONICA LARGA DISTANCIA	375,694						
U.S. LONG DISTANCE/ZERO PLUS							
UNITED TELEPHONE LONG DISTANCE	548,303	524,477	513,033	430,550	285,385	167,025	82,602
TOUCH 1 COMMUNICATIONS							
CITIZENS TELECOM							
LONG DISTANCE SAVERS							
BUSINESS TELECOM, INC. (BTI)							
INTER CONTINENTAL TELEPHONE							
L.D. SERVICES, INC.							
COASTAL TELEPHONE COMPANY							
NATIONAL TELEPHONE COMMUNICATIONS, INC.							
VARTEC TELECOM, INC.							
CINCINNATI BELL LONG DISTANCE INC.	67,689						
GENERAL COMMUNICATIONS, INC.	88,360	82,386	86,089	85,773	83,468	84,807	89,338
ALLTEL LONG DISTANCE							
SWITCHED SERVICES COMMUNICATIONS 13/							
TELAMERICA, INC.	101,968	102,530	100,213	99,038	90,570	94,654	94,292
ATX TELECOMMUNICATIONS SERVICES							
ONE CALL COMMUNICATIONS							
AMERIVISION COMMUNICATIONS							
CENTURY AREA LONG LINES							
ACCESS LONG DISTANCE							
OCI (ONCOR)							
INTERNATIONAL TELECHARGE	83,725	87,751	95,252	71,346			
COMMONWEALTH LONG DISTANCE (CLD)							
AMERICAN TELCO, INC.							
TWT-HEARTLINE							
ACC LONG DISTANCE CORPORATION							
MATRIX TELECOM							
TRESCOM INTERNATIONAL, INC.							
DELTACOM L.D.S.							
WINSTAR GATEWAY NETWORK, INC							
MIDCOM COMMUNICATIONS							
COMMUNIQUE TELECOM							
WORLDXCHANGE 14/							
CHERRY COMMUNICATIONS							
LINTEL (LINCOLN)	99,594	95,126	96,966	93,353	94,031	92,636	93,352
SONIC COMMUNICATIONS 15/							
TELESPHERE NETWORK 15/	111,386						
PUERTO RICO TEL-COM	99,821						
NETECH COMM. US WEST							
TOTAL QUALIFYING CARRIERS	130,589,544	129,000,782	126,883,689	125,356,404	123,063,038	121,349,606	120,244,460
NON-QUALIFYING CARRIERS	1,819,064	1,776,233	1,598,790	1,390,131	1,297,791	1,315,809	1,222,040
TOTAL INDUSTRY PRESUBSCRIBED LINES	132,408,608	130,777,015	128,482,479	126,746,535	124,360,829	122,665,415	121,466,500

SEE NOTES FOLLOWING TABLE 10.7

TABLE 10.3

MARKET SHARE OF PRESUBSCRIBED LINES

		AT&T	MCI	SPRINT	WORLD CO M	OTHER CARRIERS
1987	DEC	83.7 %	8.2 %	4.8 %		3.3 %
1988	JUNE	82.2	8.9	5.2		3.7
	DEC	80.6	9.8	5.8		3.9
1989	JUNE	78.9	10.8	6.1	0.0 %	4.3
	DEC	77.4	11.7	6.4	0.1	4.5
1990	JUNE	76.2	12.9	6.2	0.1	4.7
	DEC	75.6	13.2	6.6	0.1	4.6
1991	JUNE	75.4	13.1	6.5	0.1	4.8
	DEC	75.0	13.5	6.2	0.2	5.0
1992	JUNE	74.2	14.0	6.2	0.2	5.4
	DEC	73.0	14.5	6.4	0.3	5.8
1993	JUNE	72.4	15.1	6.1	0.7	5.8
	DEC	71.2	15.3	6.5	1.2	5.8
1994	JUNE	70.5	15.3	6.4	1.3	6.5
	DEC	70.0	14.8	6.4	1.3	7.4
1995	JUNE	68.2	15.6	6.4	2.4	7.4
	DEC	66.4	15.7	6.4	2.7	8.8
1996	JUNE	64.0	15.6	7.0	2.6	10.8
	DEC	63.3	14.5	7.4	2.7	12.1

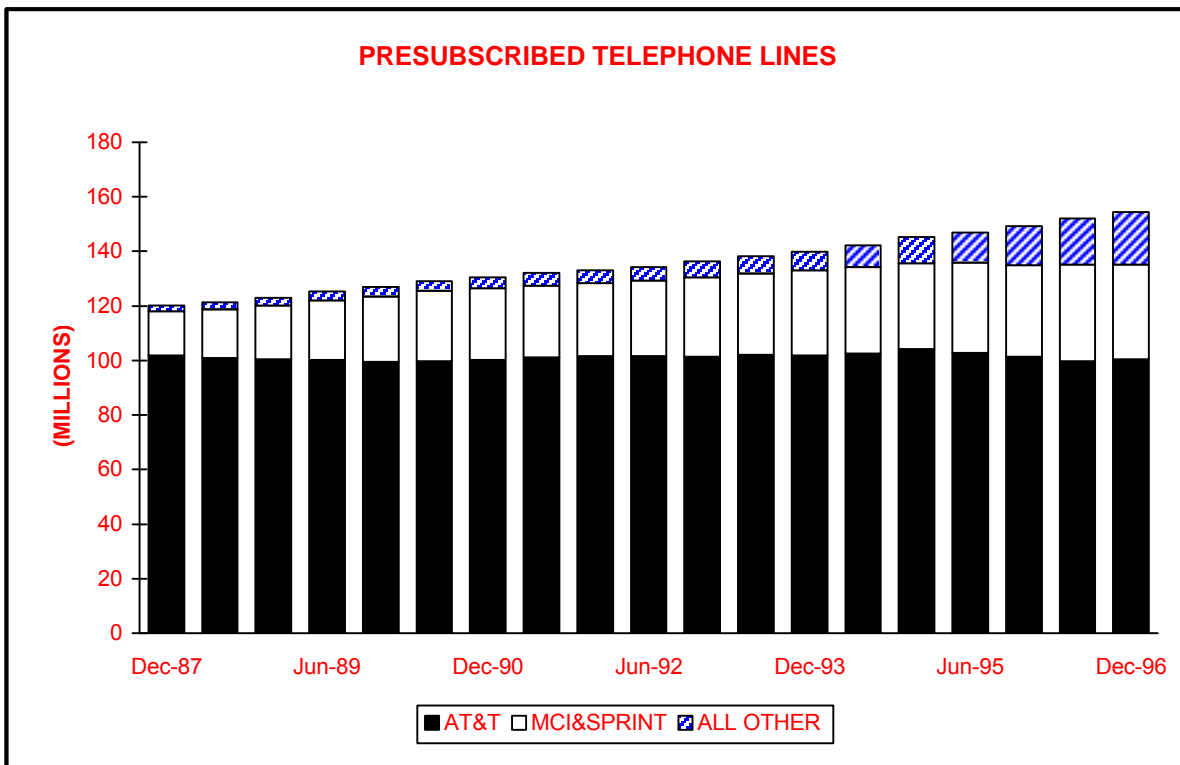


TABLE 10.4

**MARKET SHARE OF PRESUBSCRIBED TELEPHONE LINES BY STATE
AS OF DECEMBER 31, 1996**

STATE	AT&T	MCI	SPRINT	WORLDCOM	EXCEL	OTHER CARRIERS	TOTAL LINES
ALABAMA	67.1 %	13.0 %	4.0 %	3.6 %	3.9 %	8.3 %	2,233,362
ALASKA	0.0	0.0	0.0	0.0	0.0	100.0	355,185
ARIZONA	59.8	14.4	8.9	4.6	2.7	9.6	2,414,612
ARKANSAS	67.2	11.4	5.5	4.2	4.7	7.0	1,288,457
CALIFORNIA	61.7	16.4	9.0	2.6	2.4	7.9	19,805,310
COLORADO	56.1	17.0	8.9	4.2	3.1	10.6	2,381,182
CONNECTICUT	38.8	11.3	5.3	1.8	0.8	42.0	2,035,573
DELAWARE	66.4	16.5	6.3	1.4	1.1	8.4	466,474
DIST. OF COLUMBIA	67.9	17.7	6.8	2.3	0.0	5.3	771,630
FLORIDA	66.2	12.2	8.0	3.3	2.9	7.3	9,571,502
GEORGIA	64.3	14.4	8.4	2.7	3.1	7.2	4,275,408
HAWAII	56.5	13.9	18.5	0.4	3.8	7.0	615,288
IDAHO	58.5	13.2	6.2	4.5	5.8	11.8	612,755
ILLINOIS	66.4	13.6	7.4	2.7	1.9	8.0	7,442,595
INDIANA	67.9	13.0	6.5	3.1	2.9	6.6	3,122,167
IOWA	61.8	16.5	5.3	5.3	2.8	8.2	1,495,268
KANSAS	61.9	13.0	10.9	2.9	3.3	7.9	1,486,306
KENTUCKY	67.2	12.6	4.3	4.3	4.6	7.0	1,897,582
LOUISIANA	63.2	13.3	4.4	6.3	2.5	10.4	2,265,803
MAINE	71.3	11.6	6.6	1.5	2.0	7.1	754,878
MARYLAND	64.6	18.8	7.4	1.9	0.0	7.3	3,052,067
MASSACHUSETTS	70.5	13.0	8.7	1.9	0.7	5.2	4,151,814
MICHIGAN	62.7	14.5	6.2	2.3	3.0	11.2	5,703,053
MINNESOTA	58.5	19.8	5.8	2.6	2.9	10.4	2,729,586
MISSISSIPPI	66.9	14.0	3.7	4.7	3.2	7.5	1,244,747
MISSOURI	62.5	12.9	10.6	3.6	2.9	7.4	3,064,182
MONTANA	64.0	11.6	6.2	2.5	4.9	10.7	481,698
NEBRASKA	59.2	14.1	6.4	4.3	3.2	12.7	927,923
NEVADA	58.6	13.3	14.8	3.0	3.2	7.1	1,074,104
NEW HAMPSHIRE	71.1	11.3	8.2	1.7	0.9	6.8	752,763
NEW JERSEY	71.2	14.3	5.1	2.0	1.0	6.4	5,776,498
NEW MEXICO	59.8	16.1	7.6	4.4	3.8	8.4	814,166
NEW YORK	64.3	14.2	9.0	1.9	0.9	9.6	11,562,379
NORTH CAROLINA	63.8	11.5	10.2	2.5	3.9	8.1	4,166,616
NORTH DAKOTA	59.4	16.3	4.4	6.0	3.8	10.2	354,244
OHIO	63.1	14.0	7.3	2.8	2.3	10.5	6,227,640
OKLAHOMA	63.0	12.4	6.5	3.7	4.4	10.0	1,822,825
OREGON	64.0	11.3	9.0	5.0	2.8	7.9	1,847,314
PENNSYLVANIA	66.1	14.3	6.4	1.7	1.6	10.0	7,119,669
RHODE ISLAND	72.1	12.0	7.5	2.0	1.1	5.3	602,318
SOUTH CAROLINA	60.3	14.9	5.3	2.9	4.9	11.6	1,962,005
SOUTH DAKOTA	61.0	15.0	4.6	4.0	4.8	10.7	385,081
TENNESSEE	67.3	13.3	6.3	3.9	3.2	6.0	3,071,812
TEXAS	58.5	15.8	7.7	3.2	2.9	11.9	10,678,438
UTAH	58.1	14.6	7.4	4.0	3.9	12.0	984,594
VERMONT	67.7	12.5	7.1	2.1	1.1	9.5	365,472
VIRGINIA	61.9	20.6	8.3	2.3	0.9	6.0	3,765,373
WASHINGTON	59.8	13.8	10.1	3.6	3.4	9.4	3,270,199
WEST VIRGINIA	69.7	15.5	4.7	2.6	0.4	7.2	846,340
WISCONSIN	64.2	14.7	5.7	2.4	2.4	10.7	3,057,769
WYOMING	66.9	12.7	6.1	4.0	3.6	6.8	274,309
UNITED STATES	63.3	14.5	7.6	2.9	2.4	9.3	157,428,335
N. MARIANA ISL.	0.0	71.3	0.0	0.0	0.0	28.7	20,976
PUERTO RICO	41.1	10.6	4.0	0.0	0.0	44.4	1,166,721
VIRGIN ISLANDS	70.8	0.0	10.3	0.0	0.0	18.9	56,211
GRAND TOTAL	63.1 %	14.5 %	7.6 %	2.8 %	2.4 %	9.6 %	158,672,243

TABLE 10.5**INCUMBENT LOCAL EXCHANGE CARRIERS' SHARE OF PRESUBSCRIBED LINES IN THEIR OWN SERVICE AREAS**

Year	ILECs with Presubscribed Lines in Their Own Service Areas	Study Areas with Lines Presubscribed to the Serving ILEC	Lines Presubscribed to ILECs in Their Own Service Areas	Total Lines in Study Areas with Lines Presubscribed to the Serving ILEC	ILECs' Share of Total Lines
1989	7	21	861,174	4,982,221	17.3 %
1990	9	25	957,969	5,275,279	18.2
1991	12	37	1,101,824	5,922,057	18.6
1992	18	55	1,422,150	7,989,993	17.8
1993	28	75	1,628,055	10,564,681	15.4
1994	42	101	1,819,772	11,357,655	16.0
1995	48	141	2,269,976	12,789,604	17.7
1996	66	254	4,020,982	31,016,942	13.0

TABLE 10.6**DISTRIBUTION OF ILECs BY NUMBER OF STUDY AREAS IN WHICH THEY PROVIDE BOTH LOCAL AND LONG DISTANCE SERVICE ***

Year	ILECs Serving 1 Study Area	ILECs Serving 2 Study Areas	ILECs Serving 3 to 10 Study Areas	ILECs Serving 11 to 24 Study Areas	ILECs Serving 25 or More Study Areas	Total
1989	4	2	0	1	0	7
1990	5	3	0	1	0	9
1991	8	2	1	1	0	12
1992	12	3	2	1	0	18
1993	21	4	1	2	0	28
1994	33	6	0	3	0	42
1995	37	7	1	1	2	48
1996	52	8	0	2	4	66

* A study area is a local exchange carrier's operations in a given state.

TABLE 10.7**AVERAGE ILEC SHARE OF PRESUBSCRIBED LINES IN ITS SERVICE AREA**

YEAR BEGINNING LONG DISTANCE SERVICE	YEAR OFFERING LONG DISTANCE SERVICE							AVERAGE PSL	STUDY AREAS
	FIRST	SECOND	THIRD	FOURTH	FIFTH	SIXTH	SEVENTH		
1990	22.2 %	25.5 %	27.0 %	27.8 %	26.4 %	26.7 %	30.5 %	36,528	4
1991	13.5	16.2	17.6	15.7	24.8	30.5		41,659	12
1992	16.3	16.5	16.1	18.1	19.1			109,486	17
1993	20.8	21.0	26.5	31.4				117,880	19
1994	27.2	32.1	34.0					13,440	27
1995	14.4	24.0						21,116	40
1996	10.7							155,643	114
TOTAL	14.8 %	23.5 %	25.5 %	23.1 %	22.1 %	29.6 %	30.5 %	101,707	233
SAMPLE SIZE	233	119	79	52	33	16	4		

NOTES FOR TABLE 10.2

- 1/ Information for each qualifying company is only shown for years in which the carrier had at least 0.05% of overall presubscribed lines.
- 2/ Purchased by AT&T in 1995.
- 3/ LDDS/WorldCom changed its name to WorldCom, Inc. in May 1995.
- 4/ WorldCom and Wiltel merged on January 5, 1995.
- 5/ Name changed from Litel, December 1994.
- 6/ Name changed from Teledial America, December 1994.
- 7/ The total number of presubscribed lines reported by Frontier in 1995 and 1996 are only for those subsidiaries which meet the qualifying companies' threshold noted in footnote 1 above.
- 8/ Purchased by Frontier in 1995.
- 9/ Name changed from RCI Long Distance, December 1994.
- 10/ Formerly American Sharecom; purchased by Frontier in 1995.
- 11/ Formerly Schneider Communications; purchased by Frontier in 1995.
- 12/ Formerly West Coast Telecommunications; purchased by Frontier in 1995.
- 13/ Subsidiary of IXC Communications.
- 14/ Name changed from Communications Telesystems International (CTI) in 1995.
- 15/ Company went bankrupt.

TABLE 10.8

TOTAL OPERATING REVENUES OF LONG DISTANCE SERVICE PROVIDERS
(DOLLAR AMOUNTS SHOWN IN MILLIONS)

COMPANY	1997	1996	1995	1994	1993	1992	1991
AT&T COMPANIES 1/							
AT&T COMMUNICATIONS, INC.	\$39,470	\$39,264	\$38,069	\$37,166	\$35,731	\$35,495	\$34,384
ALASCOM, INC.			325	329	320	333	338
MCI COMPANIES 2/							
MCI COMMUNICATIONS CORP.	17,150	16,372	14,617	11,715	10,947	9,719	8,266
TELECOM*USA							
SPRINT COMPANIES 3/							
SPRINT COMMUNICATIONS CO.	8,595	7,944	7,277	6,805	6,139	5,658	5,378
GTE SPRINT							
US TELECOM							
WORLDCOM COMPANIES 4/							
WORLDCOM, INC.	5,897	4,485	3,640	2,221	1,145	801	263
ADVANCED TELECOMMUNICATIONS CORP.							356
METROMEDIA COMMUNICATIONS CORP.					297	369	369
ITT COMMUNICATION SERVICES, INC.							
COMSYSTEMS NETWORK SERVICES					116	135	131
WILTEL, INC.				917	664	494	405
MFS INTELENET, INC.		122	118				
EXCEL COMPANIES 5/							
EXCEL TELECOMMUNICATIONS, INC.	1,180	1,091	363	156			
TELCO HOLDINGS, INC.	379	429	215				
LONG DISTANCE WHOLESALE GROUP	176						
FRONTIER COMPANIES 6/							
ALLNET COMM. SVCS. dba FRONTIER COMM. SVCS.	775	1,119	827	568	436	376	347
LEXITEL							
FRONTIER COMMUNICATIONS INT'L, INC.	223	323	309	306	213	168	155
FRONTIER COMMUNICATIONS OF THE WEST, INC.	324		127	144			
FRONTIER COMM. OF THE NORTH CENTRAL REGION		121	133	123			
LCI COMPANIES 7/							
LCI INTERNATIONAL TELECOM CORP.	1,001	1,103	671	453	317	243	208
USLD COMMUNICATIONS CORP.	241	188	155	136	100		
CABLE & WIRELESS, INC.	1,066	919	700	654	557	495	406
VARTEC TELECOM, INC.	820	470	125	107			
STAR TELECOMMUNICATIONS, INC.	376	208					
PT-1 COMMUNICATIONS, INC.	358	117					
COMMUNICATION TELESYSTEMS INT'L.	345	196	115				
GTE COMMUNICATIONS CORP.	340						
TELEGROUP, INC.	337	213	129				
TEL-SAVE, INC.	305	232	180				
PACIFIC GATEWAY EXCHANGE, INC.	299	162					
IXC LONG DISTANCE, INC.	258						
WILLIAMS COMMUNICATIONS, INC.	227						
BUSINESS TELECOM, INC. 8/	195	149	115				
RSL COMMUNICATIONS, LTD.	192						
CHERRY COMMUNICATIONS, INC. 9/	180	354					
GENERAL COMMUNICATION, INC.	158	143	120	106	92		
TRESCOM INTERNATIONAL, INC.	158	140					
SNET AMERICA, INC.	142						
TOTAL-TEL USA COMMUNICATIONS, INC.	123						
ACC LONG DISTANCE CORP.	122	118					
ONE CALL COMMUNICATIONS, INC.	118	114					
MIDCOM COMMUNICATIONS, INC. 10/		149	204	109			
GE CAPITAL COMMUNICATIONS SERVICES CORP.			120				
ONCOR COMMUNICATIONS, INC.			111	172	140	159	181
THE FURST GROUP, INC.			109				
AMERICAN NETWORK EXCHANGE, INC.			101	109			
TELESPHERE NETWORK, INC. 11/							308
NATIONAL TELEPHONE SERVICES, INC.							
OTHERS 12/	7,097	5,788	5,168	5,055	4,319	3,923	2,948
TOTAL LONG DISTANCE CARRIERS	88,627	82,033	74,143	67,351	61,533	58,368	54,443
TOLL SERVICE REVENUES:							
BELL OPERATING COMPANIES	7,138	7,950	8,189	9,527	9,849	9,718	10,066
OTHER LOCAL TELEPHONE COMPANIES 12/	2,804	3,298	3,143	3,848	3,908	3,897	4,049
TOTAL LOCAL EXCHANGE COMPANIES	9,942	11,248	11,332	13,375	13,757	13,615	14,115
TOTAL REVENUES OF LONG DISTANCE SERVICE PROVIDERS	\$98,569	\$93,281	\$85,475	\$80,726	\$75,290	\$71,983	\$68,558

SEE NOTES FOLLOWING TABLE 10.10

TABLE 10.8

TOTAL OPERATING REVENUES OF LONG DISTANCE SERVICE PROVIDERS - CONTINUED
(DOLLAR AMOUNTS SHOWN IN MILLIONS)

COMPANY	1990	1989	1988	1987	1986	1985	1984
AT&T COMPANIES 1/							
AT&T COMMUNICATIONS, INC.	\$33,880	\$34,549	\$35,407	\$35,219	\$36,514	\$36,770	\$34,935
ALASCOM, INC.	259	278	272	262	267	271	255
MCI COMPANIES 2/							
MCI COMMUNICATIONS CORP.	7,392	6,171	4,886	3,938	3,372	2,331	1,761
TELECOM*USA		713	524	396	291	201	105
SPRINT COMPANIES 3/							
SPRINT COMMUNICATIONS CO.	5,041	4,320	3,405	2,592	1,141		
GTE SPRINT					779	1,122	1,052
US TELECOM					212	387	
WORLDCOM COMPANIES 4/							
WORLDCOM, INC.	154	110					
ADVANCED TELECOMMUNICATIONS CORP.	342	326	178	162	124	86	72
METROMEDIA COMMUNICATIONS CORP.	381	127					
ITT COMMUNICATION SERVICES, INC.		404	379	287	282	241	161
COMSYSTEMS NETWORK SERVICES	130						
WILTEL, INC.	376	300					
MFS INTELENET, INC.							
EXCEL COMPANIES 5/							
EXCEL TELECOMMUNICATIONS, INC.							
TELCO HOLDINGS, INC.							
LONG DISTANCE WHOLESale GROUP							
FRONTIER COMPANIES 6/							
ALLNET COMM. SVCS. dba FRONTIER COMM. SVCS.	326	334	394	395	450	309	
LEXITEL						127	
FRONTIER COMMUNICATIONS INT'L, INC.	142	104					
FRONTIER COMMUNICATIONS OF THE WEST, INC.							
FRONTIER COMM. OF THE NORTH CENTRAL REGION							
LCI COMPANIES 7/							
LCI INTERNATIONAL TELECOM CORP.	215	197					
USLD COMMUNICATIONS CORP.							
CABLE & WIRELESS, INC.	359	275	218	180	171	146	
VARTEC TELECOM, INC.							
STAR TELECOMMUNICATIONS, INC.							
PT-1 COMMUNICATIONS, INC.							
COMMUNICATION TELESYSTEMS INT'L.							
GTE COMMUNICATIONS CORP.							
TELEGROUP, INC.							
TEL-SAVE, INC.							
PACIFIC GATEWAY EXCHANGE, INC.							
IXC LONG DISTANCE, INC.							
WILLIAMS COMMUNICATIONS, INC.							
BUSINESS TELECOM, INC. 8/							
RSL COMMUNICATIONS, LTD.							
CHERRY COMMUNICATIONS, INC. 9/							
GENERAL COMMUNICATION, INC.							
TRESCOM INTERNATIONAL, INC.							
SNET AMERICA, INC.							
TOTAL-TEL USA COMMUNICATIONS, INC.							
ACC LONG DISTANCE CORP.							
ONE CALL COMMUNICATIONS, INC.							
MIDCOM COMMUNICATIONS, INC. 10/							
GE CAPITAL COMMUNICATIONS SERVICES CORP.							
ONCOR COMMUNICATIONS, INC.	230	275					
THE FURST GROUP, INC.							
AMERICAN NETWORK EXCHANGE, INC.							
TELESPHERE NETWORK, INC. 11/	293	192					
NATIONAL TELEPHONE SERVICES, INC.		150					
OTHERS 12/	2,582	2,359	1,823	1,352	992	639	414
TOTAL LONG DISTANCE CARRIERS	52,102	51,184	47,487	44,783	44,595	42,630	38,755
TOLL SERVICE REVENUES:							
BELL OPERATING COMPANIES	10,578	10,549	10,668	10,268	9,599	9,026	9,037
OTHER LOCAL TELEPHONE COMPANIES 12/	4,112	4,291	4,445	3,468	3,274	3,159	3,364
TOTAL LOCAL EXCHANGE COMPANIES	14,690	14,840	15,113	13,736	12,873	12,185	12,401
TOTAL REVENUES OF LONG DISTANCE SERVICE PROVIDERS	\$66,792	\$66,024	\$62,600	\$58,519	\$57,468	\$54,815	\$51,156

SEE NOTES FOLLOWING TABLE 10.10

TABLE 10.9

TOTAL TOLL SERVICE REVENUES - MARKET SHARE
(BASED ON REVENUES OF LONG DISTANCE CARRIERS ONLY)

YEAR	AT&T	MCI	SPRINT	WORLDCOM	ALL OTHER LONG DISTANCE CARRIERS	HERFINDAHL- HIRSCHMAN INDEX (HHI) *
1984	90.1 %	4.5 %	2.7 %		2.6 %	8,155
1985	86.3	5.5	2.6		5.6	7,479
1986	81.9	7.6	4.3		6.3	6,783
1987	78.6	8.8	5.8		6.8	6,298
1988	74.6	10.3	7.2		8.0	5,720
1989	67.5	12.1	8.4	0.2 %	11.8	4,778
1990	65.0	14.2	9.7	0.3	10.8	4,527
1991	63.2	15.2	9.9	0.5	11.3	4,321
1992	60.8	16.7	9.7	1.4	11.5	4,074
1993	58.1	17.8	10.0	1.9	12.3	3,795
1994	55.2	17.4	10.1	3.3	14.0	3,466
1995	51.8	19.7	9.8	4.9	13.8	3,197
1996	47.9	20.0	9.7	5.5	17.0	2,823
1997	44.5	19.4	9.7	6.7	19.8	2,508

* FCC estimate.

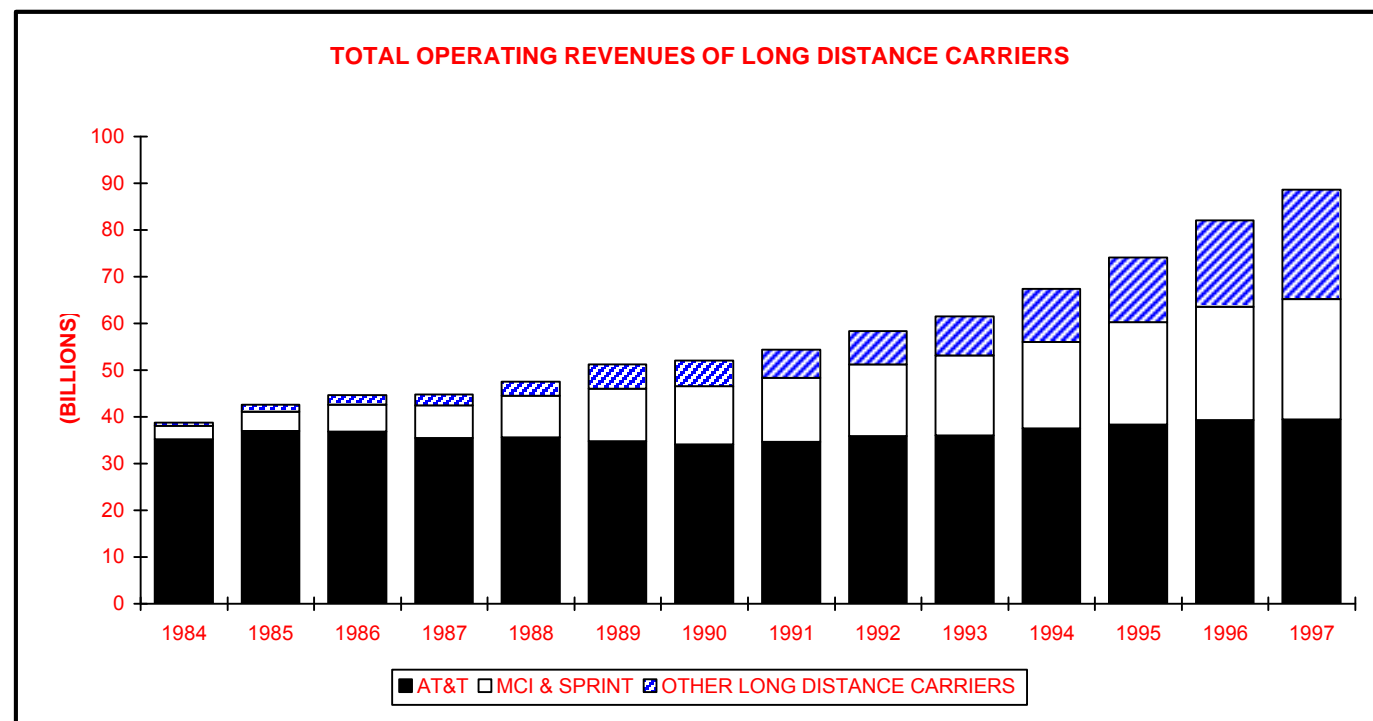
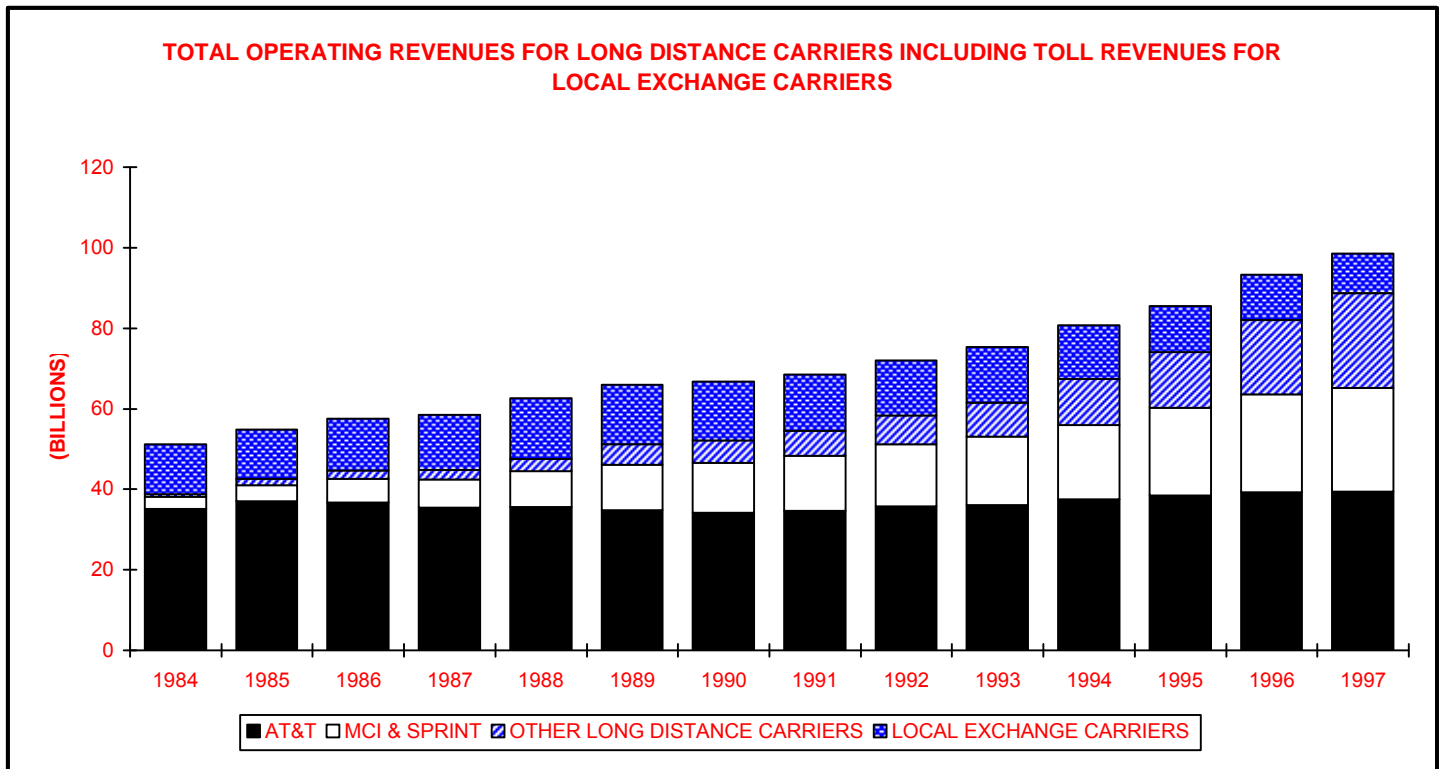


TABLE 10.10

TOTAL TOLL SERVICE REVENUES - MARKET SHARE
(BASED ON REVENUES OF LONG DISTANCE TOLL PROVIDERS)

YEAR	AT&T	MCI	SPRINT	WORLDCOM	ALL OTHER LONG DISTANCE CARRIERS	BELL OPERATING COMPANIES	OTHER LOCAL TELEPHONE COMPANIES	HERFINDAHL- HIRSCHMAN INDEX (HHI) *
1984	68.3 %	3.4 %	2.1 %		2.0 %	17.7 %	6.6 %	4,734
1985	67.1	4.3	2.0		4.4	16.5	5.8	4,571
1986	63.5	5.9	3.3		4.9	16.7	5.7	4,129
1987	60.2	6.7	4.4		5.2	17.5	5.9	3,742
1988	56.6	7.8	5.4		6.1	17.0	7.1	3,344
1989	52.3	9.3	6.5	0.2 %	9.1	16.0	6.5	2,920
1990	50.7	11.1	7.5	0.2	8.4	15.8	6.2	2,801
1991	50.2	12.1	7.8	0.4	9.0	14.7	5.9	2,768
1992	49.3	13.5	7.9	1.1	9.3	13.5	5.4	2,715
1993	47.5	14.5	8.2	1.5	10.1	13.1	5.2	2,568
1994	46.0	14.5	8.4	2.8	11.7	11.8	4.8	2,440
1995	44.9	17.1	8.5	4.3	12.0	9.6	3.7	2,390
1996	42.1	17.6	8.5	4.8	15.0	8.5	3.5	2,197
1997	40.0	17.4	8.7	6.0	17.8	7.2	2.8	2,048

* FCC estimate.

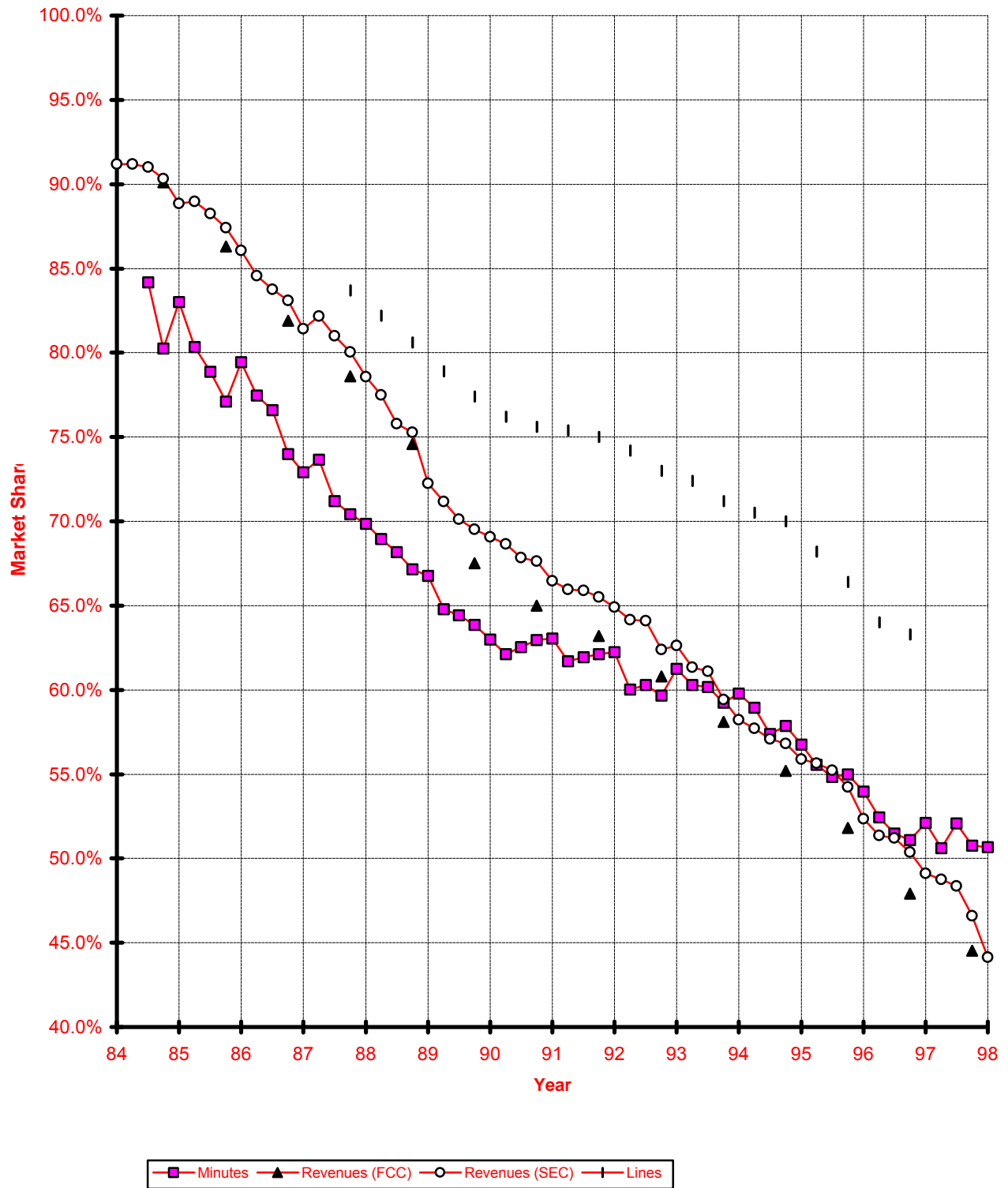


NOTES FOR TABLE 10.8

- 1/ AT&T Communications, Inc. acquired Alascom, Inc. August 7, 1995 and began filing consolidated revenues in 1996.
- 2/ MCI Communications Corp. and Telecom*USA merged in 1989 and began filing consolidated revenues in 1990.
- 3/ In July 1986, GTE Sprint and US Telecom merged into US Sprint. The information shown for GTE Sprint and US Telecom for 1986 is for January 1 - June 30. The information shown for Sprint Communications Corp. (then US Sprint) for 1986 is for July 1 - December 31. United Telecommunications, Inc., then majority owner of US Sprint, purchased the remaining interest from GTE in July 1992. Effective February 26, 1992, the company's name became Sprint Communications Co.
- 4/ Metromedia Communications Corp. and ITT Communications Services, Inc. merged during 1988, but reported 1989 revenue separately. LDDS Communications, Inc. and Advanced Telecommunications Corp. merged in 1992. In 1993, LDDS merged with Metromedia Communications Corp. and Comsystems Network Services. For 1993, only the revenues that were received after the merger are included in LDDS's revenues. Those revenues up to the merger are listed individually for 1993. LDDS and Wiltel merged January 5, 1995. In May 1995, LDDS changed its name to WorldCom, Inc. WorldCom acquired MFS Intelenet on December 31, 1996.
- 5/ Excel Telecommunications, Inc. acquired Telco Holdings, Inc. in October 1997. Telco Holdings, Inc. and its affiliate Long Distance Wholesale Group filed a consolidated revenue statement for 1996. Excel Telecommunications, Inc., Telco Holdings, Inc., and Long Distance Wholesale Club each filed separate revenue statements for 1997.
- 6/ Allnet Communications Services and Lexitel merged at the end of 1985. In 1994, RCI Long Distance, Inc. changed its name to Frontier Communications International, Inc. Frontier Corporation, the parent company of Frontier Communications International, Inc., acquired ALC Communications, the parent company of Allnet, August 16, 1995. On May 18, 1995, Frontier Corporation acquired WCT Communications, the parent company of West Coast Telecommunications, which is now known as Frontier Communications of the West, Inc. In addition, on March 17, 1995, Frontier Corporation acquired American Sharecom, which is now Frontier Communications of the North Central Region.
- 7/ In September 1997, U.S. Long Distance, Inc. changed its name to USLD Communications, Inc. LCI International Telecom Corp. and USLD Communications, Inc. merged in December 1997, and filed separate revenue statements for 1997.
- 8/ Data for 1996 taken from the Annual Report to the Colorado Public Utilities Commission for telecommunications carriers regulated pursuant to §40-15-301 C.R.S.
- 9/ Cherry Communications, Inc. filed for bankruptcy protection in October 1997.
- 10/ MC Liquidating Corp. f/k/a Midcom Communications, Inc. filed for bankruptcy protection in November 1997.
- 11/ Telesphere Network, Inc. and National Telephone Services, Inc. merged during 1989. In 1991 Telesphere Network, Inc. went into bankruptcy.
- 12/ Estimated by FCC staff.

CHART 10.1

INDICATORS OF AT&T MARKET SHARE



MINUTES OF CALLING:

1. Dial Equipment Minutes:

As in the case of telephone lines, there are several alternative measures of calling volumes. Most subscribers purchase service with unlimited local calling. As a result, most calls are not metered and estimates of total calling are subject to wide margins of error. Periodic studies are used within the telephone industry to estimate the number of calls and calling minutes for a variety of purposes. For example, periodic studies of dial equipment minutes (DEMs) are used to estimate the proportion of calling that is interstate and to allocate costs between interstate and intrastate services.

DEMs, which are shown in Table 11.1, are measured as calls enter and leave telephone switches; therefore, two DEMs are counted for every conversation minute. The volume of local calling has grown at approximately the same rate as the number of local telephone lines. In contrast, the volume of long distance calling surged as prices fell. As a result, a greater portion of calls are long distance. Intrastate toll minutes increased from 8% of all minutes in 1980 to 11% in 1996. During that same period, interstate calling minutes increased from 8% of the total to 15%.

As shown in Table 11.2, the average telephone line is used primarily for local calling and is used somewhat less than an hour per day for all calls (local, intrastate toll, and interstate toll). The level of local calling has remained relatively constant for a long period of time despite the introduction of facsimile machines, computer modems, and other devices that use telephone lines. Increases in long distance calling have caused the total usage per line to increase from 46 minutes in 1980 to 54 minutes in 1996.

2. Switched Access Minutes:

An alternative measure of interstate calling became available in 1984. Switched access minutes are those minutes transmitted by long distance carriers that also use the distribution networks of local telephone companies. The measure includes minutes associated with ordinary long distance calls and the "open end" of WATS and 800-like calls. It excludes calls made on private telecommunications systems, on leased lines, and minutes on the "closed end" of WATS and 800-like calls. On ordinary long distance calls, minutes are counted both where the call originates and where the call terminates.

Table 11.3 shows the total number of interstate switched access minutes handled by all long distance carriers. The number of minutes has grown steadily since mid-1984, stemming from a combination of overall economic growth and price reductions. Premium minutes have grown rapidly, reflecting both strong underlying traffic growth and the conversion of offices to equal access. Non-premium minutes (principally minutes handled by AT&T's competitors in areas

where equal access has not yet been provided) continue to decline as the process of conversion to equal access nears completion.

Telephone industry traffic experts often argue that dial equipment minutes represent the best available information on the proportions of different types of calls, while access minutes are the most accurate available data on the volume of interstate calling. However, it is not clear why reported changes in access minutes are not entirely consistent with reported changes in dial equipment minutes.

TABLE 11.1

**DIAL EQUIPMENT MINUTES
(MINUTES SHOWN IN BILLIONS)**

	LOCAL	INTRASTATE TOLL	INTERSTATE TOLL	TOTAL
1980	1,458	141	133	1,733
1981	1,492	151	144	1,787
1982	1,540	158	154	1,853
1983	1,587	166	169	1,923
1984	1,639	198	208	2,045
1985	1,673	222	250	2,145
1986	1,699	237	270	2,207
1987	1,713	253	295	2,261
1988	1,795	269	321	2,384
1989	1,829	286	344	2,459
1990	1,846	298	353	2,497
1991	1,859	302	366	2,527
1992	1,929	311	381	2,622
1993	2,030	317	396	2,743
1994	2,128	327	421	2,876
1995	2,229	344	451	3,024
1996	2,407	371	487	3,266
INCREASE OVER PRIOR YEAR				
1981	2 %	7 %	8 %	3 %
1982	3	5	7	4
1983	3	5	10	4
1984	3	19	23	6
1985	2	12	20	5
1986	2	7	8	3
1987	1	7	9	2
1988	5	6	9	5
1989	2	6	7	3
1990	1	4	3	2
1991	1	1	4	1
1992	4	3	4	4
1993	5	2	4	5
1994	5	3	6	5
1995	5	5	7	5
1996	8	8	8	8
PERCENT DISTRIBUTION				
1980	84 %	8 %	8 %	100 %
1981	83	8	8	100
1982	83	9	8	100
1983	83	9	9	100
1984	80	10	10	100
1985	78	10	12	100
1986	77	11	12	100
1987	76	11	13	100
1988	75	11	13	100
1989	74	12	14	100
1990	74	12	14	100
1991	74	12	14	100
1992	74	12	15	100
1993	74	12	14	100
1994	74	11	15	100
1995	74	11	15	100
1996	74	11	15	100

SOURCE: NATIONAL EXCHANGE CARRIER ASSOCIATION.

TABLE 11.2

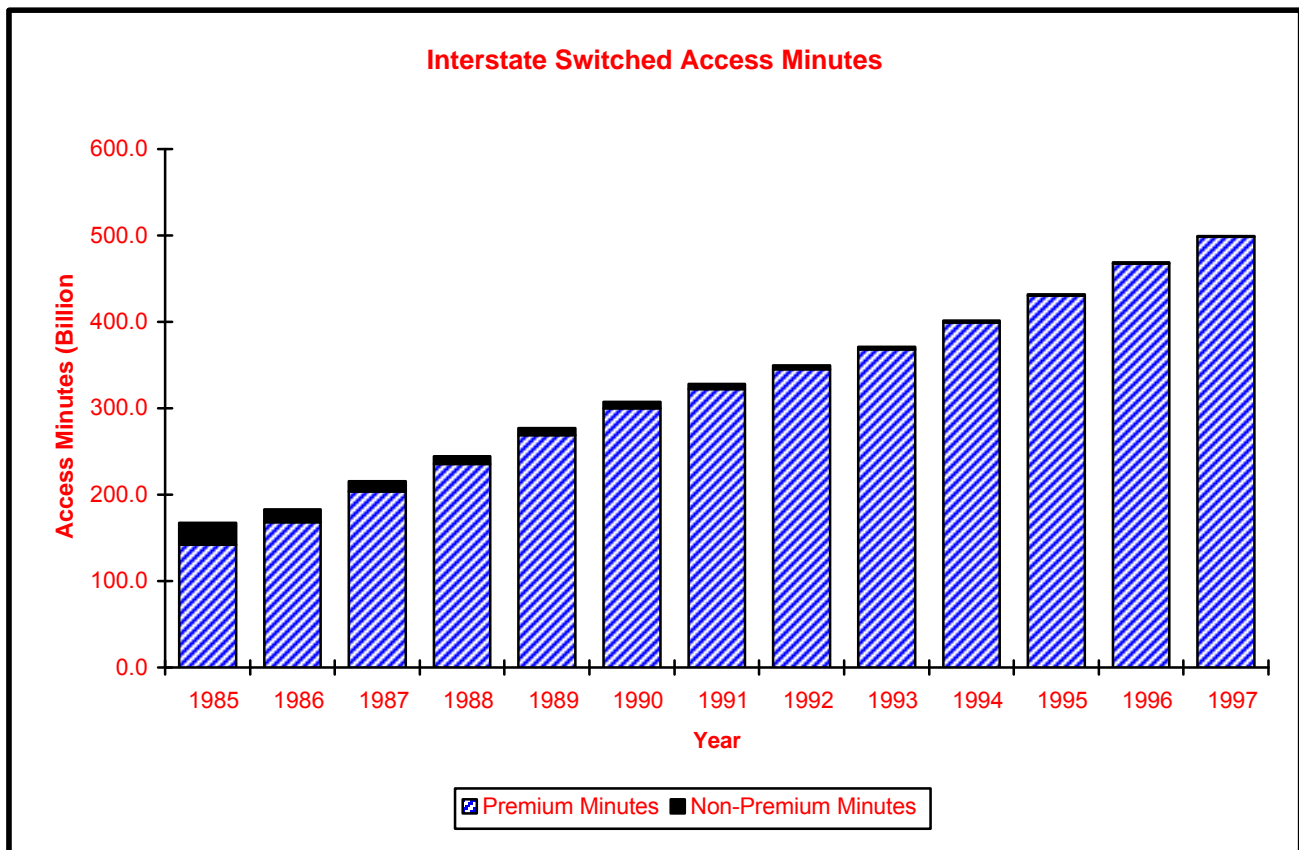
**LINE USAGE PER DAY
DIAL EQUIPMENT MINUTES PER LOCAL LOOP**

	LOCAL	INTRASTATE TOLL	INTERSTATE TOLL	TOTAL
1980	39	4	4	46
1981	39	4	4	46
1982	39	4	4	47
1983	39	4	4	48
1984	40	5	5	50
1985	40	5	6	51
1986	39	5	6	51
1987	38	6	7	50
1988	39	6	7	51
1989	38	6	7	51
1990	37	6	7	50
1991	37	6	7	50
1992	37	6	7	50
1993	38	6	7	51
1994	38	6	8	51
1995	38	6	8	52
1996	40	6	8	54
INCREASE OVER PRIOR YEAR				
1981	-1 %	4 %	5 %	0 %
1982	1	3	5	2
1983	0	2	7	1
1984	1	17	21	4
1985	-1	9	17	2
1986	-0	5	6	1
1987	-3	3	5	-1
1988	1	2	5	2
1989	-1	3	4	-0
1990	-2	1	-1	-2
1991	-2	-1	1	-1
1992	1	0	1	1
1993	2	-1	1	2
1994	1	-0	3	1
1995	1	1	3	1
1996	3	3	3	3

TABLE 11.3

INTERSTATE SWITCHED ACCESS MINUTES
(FIGURES SHOWN IN BILLIONS)

	PREMIUM MINUTES	NON-PREMIUM MINUTES	TOTAL MINUTES
1985	142.4	24.7	167.1
1986	168.5	14.6	183.1
1987	203.9	11.9	215.7
1988	235.4	9.2	244.6
1989	269.1	8.0	277.1
1990	300.4	7.1	307.4
1991	322.2	5.8	328.0
1992	345.5	4.2	349.8
1993	368.3	3.0	371.2
1994	399.3	2.1	401.4
1995	430.3	1.6	431.9
1996	467.7	1.2	468.9
1997	498.4	0.7	499.1



PRICE INDEXES FOR TELEPHONE SERVICES:

The Bureau of Labor Statistics (BLS) collects a variety of information on telephone service as part of three separate programs -- the Consumer Price Index (CPI), the Producer Price Index (PPI), and the Consumer Expenditure Survey. They can be found on the internet at <http://stats/bls.gov/blshome.html> on the World Wide Web. The following material illustrates the range of information available from price indexes.

1. Long-Term Trends in Price Indexes:

A price index for telephone service was first published in 1935. Since that time, telephone prices have tended to increase at a slower pace than most other prices. Table 12.1 shows long-term changes in the Consumer Price Indexes for all items, all services, telephone services, each of the seven major categories that currently constitute the overall CPI, and several services that are often characterized as being public utilities.

2. Comprehensive Price Indexes:

The CPI index of telephone services is based on a "market basket" intended to represent the telephone related expenditures of a typical urban household. It includes both local and long distance services. The annual rate of change is shown in Table 12.2 for the overall CPI (which measures the impact of inflation on consumers) and the CPI for telephone services. In addition, Table 12.2 shows the Gross Domestic Product fixed-weight price index (which measures inflation throughout the economy) prepared by the Bureau of Economic Analysis.

3. Price Index for Local Service:

The CPI index of local telephone charges is based on a broadly defined market basket that includes monthly service charges, message unit charges, leased equipment, installation, service enhancements (such as tone dialing and call waiting), taxes, subscriber line charges, and all other consumer expenditures associated with telephone services except long distance charges. In contrast, the PPI index of monthly residential rates is much more narrowly defined. It is based only on monthly service charges for residential service, optional touch-tone service, and subscriber line charges. It excludes taxes, charges for special services such as call waiting, and all other expenditures. The annual rates of change for these indexes of local costs are presented in Table 12.3.

4. Price Indexes for Long Distance Service:

Price indexes are available for intrastate toll and interstate toll services since December 1977. These series are also presented in Table 12.3.

5. Price Index Limitations:

Price indexes are less reliable when industries are changing rapidly. For example, in 1992, long distance carriers began to increase basic rates while greatly expanding their range of discount offerings. The fixed market basket of toll calls measured for the CPI did not fully reflect these discounts. In 1995, BLS made major changes to the PPI telephone series, and there are no data after July 1995 comparable with prior data. Because of these sorts of difficulties, measures of average revenues are sometimes used as alternatives to price indexes.

TABLE 12.1
LONG-TERM CHANGES FOR VARIOUS PRICE INDEXES
(ANNUAL RATES OF CHANGE)

	1935-1997	1987 - 1997
CPI all items	4.0 %	3.4 %
CPI all services	4.4	4.0
CPI telephone services	2.0	1.0
CPI major categories:		
- food & beverages	*	3.3
- housing	*	3.1
- apparel & upkeep	2.9	1.6
- transportation	3.7	2.9
- medical care	5.1	5.9
- recreation **	*	2.3
- other goods & services	*	5.7
CPI public transportation	4.9	4.4
CPI piped gas	3.6	2.3
CPI electricity	2.2	1.6
CPI sewer & water maintenance	*	5.2
CPI postage	4.1	3.8

Source: Bureau of Labor Statistics.

* Series not established until after 1935.

** Series not established until 1992. Figure reflects annual change between 1992 and 1997.

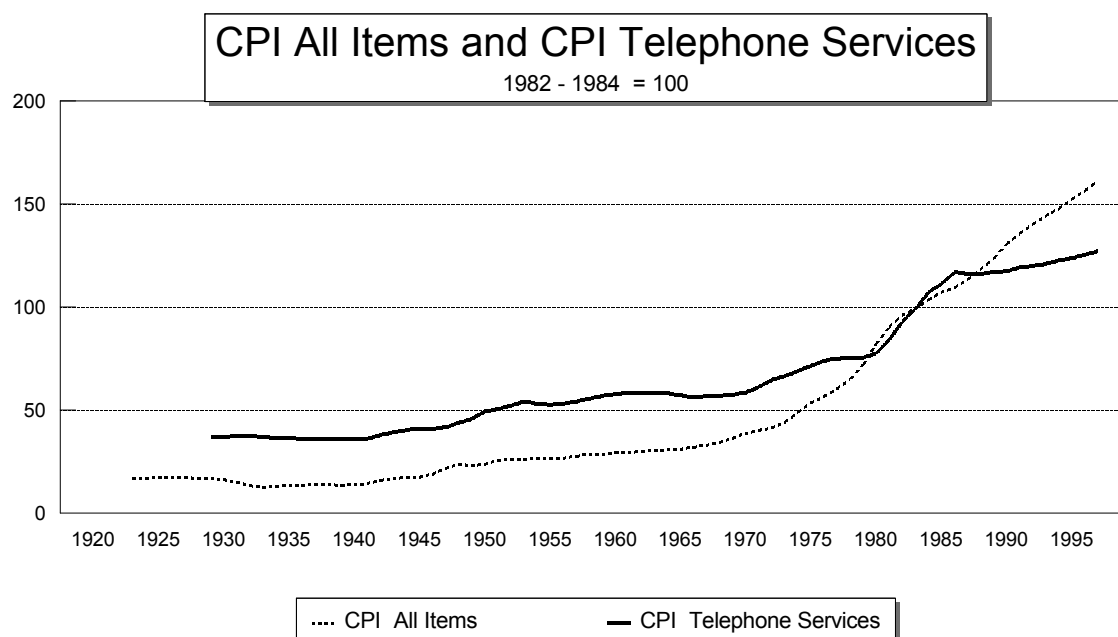


TABLE 12.2
ANNUAL CHANGES IN MAJOR PRICE INDEXES

	GDP Chain-type Price Index	CPI: All Items	CPI: Telephone Services
1978	7.2 %	9.0 %	0.9 %
1979	8.6	13.3	0.7
1980	9.2	12.5	4.6
1981	9.4	8.9	11.7
1982	6.2	3.8	7.2
1983	4.3	3.8	3.6
1984	3.7	3.9	9.2
1985	3.6	3.8	4.7
1986	2.5	1.1	2.7
1987	3.1	4.4	-1.3
1988	3.6	4.4	1.3
1989	4.2	4.6	-0.3
1990	4.3	6.1	-0.4
1991	4.0	3.1	3.5
1992	2.8	2.9	-0.3
1993	2.6	2.7	1.8
1994	2.3	2.7	0.7
1995	2.5	2.5	1.2
1996	2.3	3.0	1.5
1997	1.8	1.7	0.2

Sources: Bureau of Labor Statistics and Bureau of Economic Analysis

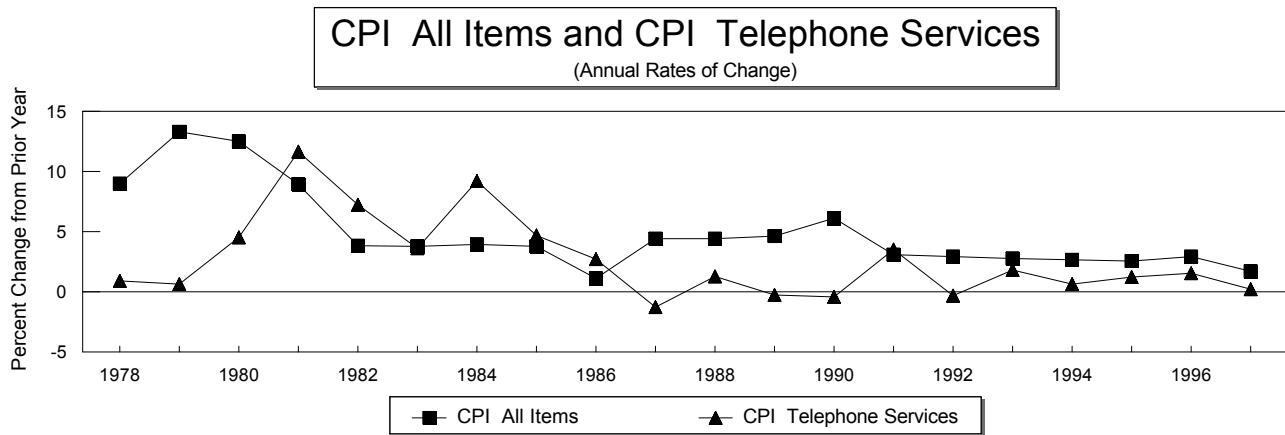


TABLE 12.3

ANNUAL CHANGES IN PRICE INDEXES FOR LOCAL AND LONG DISTANCE TELEPHONE SERVICES

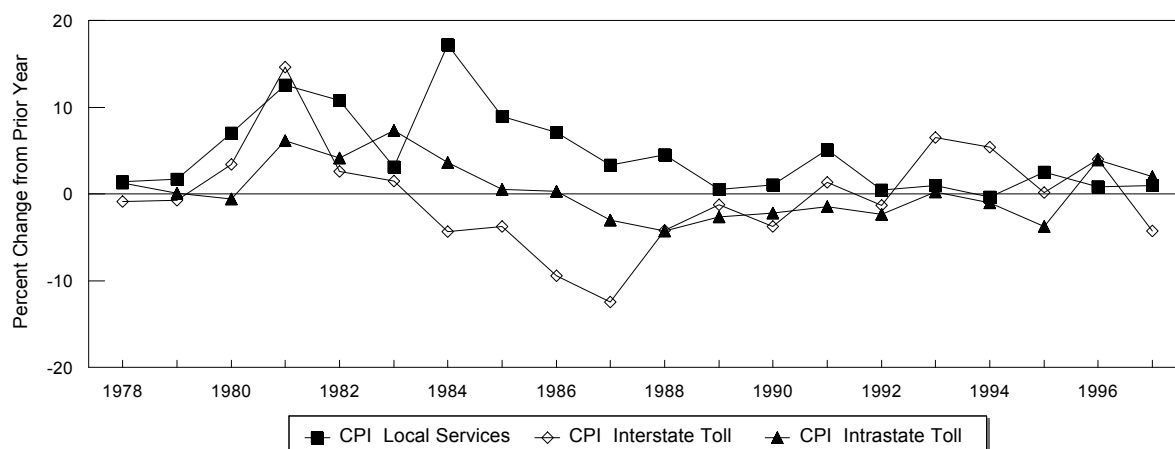
	Local Residential Service		Toll Service *			
	CPI: all local charges	PPI: Monthly Service Charges	Interstate Toll Calls		Intrastate Toll Calls	
			CPI	PPI	CPI	PPI
1978	1.4 %	3.1 %	-0.8 %	0.0 %	1.3 %	0.1 %
1979	1.7	1.6	-0.7	-0.9	0.1	-0.7
1980	7.0	7.1	3.4	5.5	-0.6	2.3
1981	12.6	15.6	14.6	15.9	6.2	8.0
1982	10.8	9.0	2.6	3.9	4.2	1.7
1983	3.1	0.2	1.5	0.0	7.4	3.9
1984	17.2	10.4	-4.3	-5.1	3.6	3.8
1985	8.9	12.4	-3.7	-3.0	0.6	2.1
1986	7.1	8.9	-9.4	-10.0	0.3	-3.5
1987	3.3	2.6	-12.4	-11.8	-3.0	-3.0
1988	4.5	4.6	-4.2	-2.1	-4.2	-3.7
1989	0.6	1.9	-1.3	-1.7	-2.6	0.5
1990	1.0	1.5	-3.7	-0.1	-2.2	-2.2
1991	5.1	2.1	1.3	-1.3	-1.5	-2.6
1992	0.5	-0.2	-1.3	1.0	-2.4	1.3
1993	1.0	0.8	6.5	3.8	0.2	-1.1
1994	-0.3	0.7	5.4	6.1	-1.0	-1.4
1995	2.6	**	0.1	**	-3.8	**
1996	0.9	0.4	4.0	0.7	4.0	0.9
1997	1.0	0.2	-4.3	1.7	2.0	-4.3

Source: Bureau of Labor Statistics.

* CPI toll indexes represent rates for households. Through 1994, PPI toll indexes represent rate changes for both business and residential consumers. Since 1995, PPI indices reflect rates for residential customers.

** The PPI telephone indices were revised in June of 1995. The series are not comparable.

CPI Telephone Service Price Indices
(Annual Rates of Change)



PRICE LEVELS:

1. Local Rate Levels:

The price indexes maintained by the Bureau of Labor Statistics indicate percentage changes in the price of telephone services. BLS does not publish actual rate levels. Calculations of average rates are based on surveys by FCC staff. These surveys use the same sampling areas and weights used by BLS in constructing the Consumer Price Index.

Table 13.1 presents average local rates for residential customers in urban areas. In October 1997, the representative monthly charge was \$19.92, while the charge for connecting phone service was \$43.68.

Table 13.2 presents average local rates for a business with a single phone line in an urban area. In October 1997, the representative monthly charge was \$41.65 while the charge for connecting phone service was \$73.18.

The Rural Utilities Service (RUS), formerly the Rural Electrification Administration, is an agency of the U.S. Department of Agriculture. RUS, through its telecommunications lending program, finances the construction of telecommunications infrastructure in rural America. In performing its loan monitoring and servicing functions, it collects information about the telephone companies that are its borrowers. Included in the information collected are the rates RUS borrowers charge business and residential customers. RUS can be found on the internet at <http://www.usda.gov/rus/> on the World Wide Web. Table 13.3 presents the national average rates of RUS borrowers from 1994 through 1996. These rates do not include subscriber line charges, surcharges, 911 charges, or taxes. In addition, they do not include any charges that may be imposed on customers that are more than a certain distance from the telephone company's central office. These mileage charges can be substantial.

2. Long Distance Rates:

In Table 13.4, AT&T's basic schedule prices for directly dialed long distance calls are shown for January 1984 and June 1998. Higher charges apply to other types of calls such as those using operator assistance. Lower prices are available through calling plans and other volume discounts. In 1993, AT&T first began to charge different rates to residential and business customers. Since 1984, AT&T's basic schedule charges for directly dialed interstate calls have been reduced about 30% for residential callers and 20% for business callers.

Table 13.5 contains average revenue per minute for interstate calls. From 1984 to 1994, AT&T's average revenue per minute declined from 32 cents per minute to 18 cents per minute -- a drop of 40%. Table 13.5 also shows revenue-per-minute estimates calculated by the FCC staff

for all carriers. These estimates show that billed revenue per minute has continued to decline for both international and domestic services.

TABLE 13.1

AVERAGE RESIDENTIAL RATES FOR LOCAL SERVICE IN URBAN AREAS

(as of October 15)

	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997
Representative Monthly Charge *	\$12.58	\$12.44	\$12.32	\$12.30	\$12.36	\$13.03	\$13.05	\$13.16	\$13.19	\$13.62	\$13.71	\$13.82
Subscriber Line Charges	2.04	2.66	2.67	3.53	3.55	3.56	3.55	3.55	3.55	3.54	3.54	3.53
Additional Monthly Charge for Touch-tone Service	1.57	1.52	1.54	1.52	1.33	1.06	0.97	0.94	0.77	0.44	0.30	0.12
Taxes and 911 Charges	1.51	1.56	1.58	1.70	2.00	2.12	2.15	2.29	2.31	2.41	2.40	2.44
Total Monthly Charge	17.70	18.18	18.11	19.05	19.24	19.77	19.72	19.95	19.81	20.01	19.95	19.92
Basic Connection Charge	\$45.63	\$44.04	\$42.94	\$43.06	\$43.06	\$42.00	\$41.50	\$41.38	\$41.28	\$40.91	\$41.11	\$41.06
Additional Connection Charge for Touch-tone Service	1.34	1.31	1.55	1.76	1.77	1.27	1.22	1.23	0.85	0.23	0.23	0.17
Taxes	2.28	2.20	2.11	2.44	2.32	2.30	2.29	2.30	2.33	2.44	2.36	2.46
Total Connection Charge	46.97	45.35	44.49	44.82	44.83	45.57	42.72	44.92	44.46	43.58	43.70	43.68
Additional Charge if Drop Line and Connection Block Needed	n.a.	n.a.	6.04	6.07	6.89	6.89	6.50	7.29	6.74	5.90	5.74	5.65
Lowest-cost Inside Wiring Maintenance Plan	\$0.58	\$0.85	\$0.89	\$1.07	\$1.07	\$1.20	\$1.25	\$1.31	\$1.45	\$1.52	\$1.78	\$1.62

* Rate is based on flat-rate service where available, and on measured/message service with 100 five-minute, same-zone business-day calls elsewhere.

TABLE 13.2

AVERAGE LOCAL RATES FOR BUSINESSES WITH A SINGLE LINE IN URBAN AREAS

	1989	1990	1991	1992	1993	1994	1995	1996	1997
Monthly Representative Service Charge*	\$31.06	\$30.97	\$32.29	\$32.45	\$32.70	\$32.25	\$32.48	\$32.58	\$32.69
Subscriber Line Charges	3.55	3.57	3.57	3.56	3.57	3.57	3.57	3.54	3.54
Extra for Touch-tone	2.43	2.35	1.84	1.71	1.67	1.21	0.97	0.82	0.44
Tax including 911 Charges	4.21	4.32	4.42	4.57	4.63	4.61	4.79	4.87	4.99
Total Monthly Charge	41.25	41.21	42.12	42.29	42.57	41.64	41.80	41.81	41.65
Monthly Charge for Flat-rate Service	\$33.04	\$33.29	\$34.12	\$34.06	\$34.85	\$34.39	\$34.45	\$34.42	\$34.55
Subscriber Line Charges	3.65	3.69	3.70	3.70	3.70	3.70	3.69	3.61	3.61
Extra for Touch-tone	2.12	2.11	1.87	1.84	1.76	1.12	1.00	0.89	0.58
Tax including 911 Charges	4.90	4.98	5.22	5.34	5.50	5.36	5.58	5.55	5.59
Total Monthly Charge for Flat-rate Service	43.71	44.07	44.91	44.94	45.81	44.57	44.71	44.47	44.33
Monthly Charge for Measured/Message Service	\$16.18	\$16.17	\$16.76	\$16.55	\$16.60	\$16.74	\$17.06	\$17.26	\$17.39
200 Five-minute Business-day Same-zone Calls	16.11	16.19	16.70	17.23	17.57	17.38	17.15	17.1	17.03
Subscriber Line Charges	3.54	3.55	3.55	3.54	3.55	3.55	3.54	3.51	3.51
Extra for Touch-tone	2.48	2.39	1.87	1.73	1.68	1.22	0.98	0.83	0.45
Tax including 911 Charges	4.41	4.53	4.56	4.77	4.86	4.83	5.01	5.13	5.20
Total Monthly Charge for Measured/Message Service	42.72	42.83	43.44	43.82	44.26	43.72	43.75	43.84	43.58
Cost of a Five-minute Business-day Same-zone Call	\$0.0929	\$0.0933	\$0.0912	\$0.0931	\$0.0942	\$0.0923	\$0.0925	\$0.0923	\$0.0921
Basic Connection Charge	\$71.05	\$71.36	\$72.75	\$72.55	\$71.41	\$69.88	\$67.87	\$68.47	\$68.58
Additional Connection Charge for Touch-tone Service	1.70	1.89	1.13	1.19	1.17	0.92	0.27	0.17	0.17
Tax	4.06	4.15	4.32	4.33	4.25	4.13	4.17	4.2	4.42
Total Connection Charge	76.81	77.40	78.20	78.07	76.83	74.93	72.31	72.85	73.18
Additional Charge if Drop Line and Connection Block Needed	5.92	7.87	6.90	6.83	6.64	6.49	7.28	6.98	6.86
Lowest-cost Inside Wiring Maintenance Plan	\$1.78	\$1.91	\$2.05	\$2.03	\$2.08	\$2.26	\$2.39	\$2.63	\$2.76

* Rate is based on flat-rate service where available, and on measured/message service with 200 five-minute, same-zone business-day calls elsewhere.

TABLE 13.3

AVERAGE MONTHLY LOCAL RATES OF RUS BORROWERS

Year	Average Business Rate	Average Residential Rate	Percentage of US Access Lines
1994	\$20.88	\$11.05	5.03%
1995	\$20.84	\$10.94	3.79%
1996	\$21.41	\$11.17	3.83%

* Average rates do not include subscriber line charges, surcharges, 911 charges, or taxes.

TABLE 13.4

**CHANGES IN THE PRICE OF DIRECTLY DIALED FIVE-MINUTE LONG DISTANCE CALLS
(AT&T basic rate schedules)**

Calling Distance (in airline miles, rate center to rate center)	Residential*			Business**		
	January 1984	June 1998	Percentage Change	January 1984	June 1998	Percentage Change
1 - 10 Day	\$0.96	\$1.40	45.8 %	\$0.96	\$1.82	89.3 %
Evening	0.57	0.80	40.4	0.57	1.82	218.9
Night & Weekend	0.38	0.65	71.1	0.38	1.82	378.3
11 - 22 Day	1.28	\$1.40	9.4	1.28	1.82	42.0
Evening	0.76	0.80	5.3	0.76	1.82	139.1
Night & Weekend	0.51	0.65	27.5	0.51	1.82	256.4
23 - 55 Day	1.60	\$1.40	-12.5	1.60	1.82	13.6
Evening	0.96	0.80	-16.7	0.96	1.82	89.3
Night & Weekend	0.64	0.65	1.6	0.64	1.82	184.0
56 - 124 Day	2.05	\$1.40	-31.7	2.05	1.82	-11.3
Evening	1.22	0.80	-34.4	1.22	1.82	49.0
Night & Weekend	0.82	0.65	-20.7	0.82	1.82	121.6
125 - 292 Day	2.14	\$1.40	-34.6	2.14	1.82	-15.1
Evening	1.28	0.80	-37.5	1.28	1.82	42.0
Night & Weekend	0.85	0.65	-23.5	0.85	1.82	113.8
293 - 430 Day	2.27	\$1.40	-38.3	2.27	1.82	-19.9
Evening	1.36	0.80	-41.2	1.36	1.82	33.6
Night & Weekend	0.90	0.65	-27.8	0.90	1.82	101.9
431 - 925 Day	2.34	\$1.40	-40.2	2.34	1.82	-22.3
Evening	1.40	0.80	-42.9	1.40	1.82	29.8
Night & Weekend	0.93	0.65	-30.1	0.93	1.82	95.4
926 - 1910 Day	2.40	\$1.40	-41.7	2.40	1.82	-24.3
Evening	1.44	0.80	-44.4	1.44	1.82	26.2
Night & Weekend	0.96	0.65	-32.3	0.96	1.82	89.3
1911 - 3000 Day	2.70	\$1.40	-48.1	2.70	1.82	-32.7
Evening	1.62	0.80	-50.6	1.62	1.82	12.2
Night & Weekend	1.08	0.65	-39.8	1.08	1.82	68.3
3001 - 4250 Day	2.80	\$1.40	-50.0	2.80	1.82	-35.1
Evening	1.68	0.80	-52.4	1.68	1.82	8.2
Night & Weekend	1.12	0.65	-42.0	1.12	1.82	62.3
4251 - 5750 Day	2.91	\$1.40	-51.9	2.91	1.82	-37.5
Evening	1.74	0.80	-54.0	1.74	1.82	4.5
Night & Weekend	1.16	0.65	-44.0	1.16	1.82	56.7

SOURCE: AT&T TARIFFS AND INDUSTRY ANALYSIS DIVISION, *REFERENCE BOOK OF RATES, PRICE INDICES, AND HOUSEHOLD EXPENDITURES FOR TELEPHONE SERVICE*.

* AT&T initiated a new rate structure for residential customers on November 8, 1997. The new rate structure eliminates mileage bands and implements weekday peak and off-peak time bands and a weekend band. The new rates are shown in the old rate structure for the purposes of comparison.

** AT&T initiated a new rate structure for business customers on November 5, 1997. The rate structure eliminates mileage, time-of-day, and day-of-week bands. The new rates are shown in the old rate structure for the purposes of comparison.

TABLE 13.5
AVERAGE REVENUE PER MINUTE

	AT&T	All Carriers **			
	All Interstate and International Switched Services *	All Interstate and International Switched Services	International Switched Services ***	All Domestic Interstate Switched Services	Interstate Direct Dialed Services
1984	32.3 ¢				
1985	30.8				
1986	28.0				
1987	24.5				
1988	23.4				
1989	21.8				
1990	20.1				
1991	19.7				
1992	19.4	19.4 ¢	100.2 ¢	15.0 ¢	13.3 ¢
1993	18.9	18.8	99.6	14.4	12.9
1994	18.1	17.9	90.0	13.7	12.5
1995	N/A	17.3	88.3	12.9	11.7
1996	N/A	16.4	72.4	12.6	11.6

* Source: AT&T.

** Source: Industry Analysis Division, *Telecommunications Industry Revenue: TRS Fund Worksheet Data*.

*** Billed revenue per minute for international service differs in Table 13.5 and Table 7.2. Data in Table 13.5 is based on traffic to foreign points for all U.S. carriers serving all U.S. points. Data for Table 7.2 is based on traffic for domestic U.S. points, only. The domestic U.S. includes Puerto Rico but excludes American Samoa, Guam, the Northern Mariana Islands, and the U.S. Virgin Islands.

RATE OF RETURN:

Beginning in the mid-1980s, local exchange carriers that file access tariffs with the Commission were required to file rate of return reports (FCC Form 492). The first reports were filed for the monitoring period October 1, 1985 - December 31, 1986. Carriers filed reports for each subsequent two-year monitoring period (1987-88 and 1989-90).

In 1991, carriers that became subject to price-cap incentive regulation began filing reports on a yearly basis. Non price-cap carriers continued to file reports for each two-year monitoring period (1991-1992; 1993-1994; and 1995-1996) as well as annual reports for 1991, 1993, and 1995. Rate of return reports were previously required for AT&T but have been discontinued. Table 14.1 is a summary of rates of return for 1991-1997 for price-cap carriers.

The rates of return were posted at the time of the carrier's individual Form 492 filings. They do not reflect changes, if any revisions were filed at a later date, by the carriers. Thus, they are not necessarily the official versions relevant for rate of return enforcement and other regulatory purposes but they do illustrate general industry trends. Copies of the individual carriers' Form 492 reports are on file in the Common Carrier Bureau public reference room, 2000 M Street, N.W., Room 575.

TABLE 14.1

**INTERSTATE RATE OF RETURN SUMMARY
YEARS 1991 THROUGH 1997
PRICE CAP COMPANIES**

FINAL REPORTS FOR 1991, 1992, 1993, 1994, 1995, 1996 AND INITIAL REPORT FOR 1997

REPORTING ENTITY		1997	1996	1995	1994	1993	1992	1991
	AT&T COMMUNICATIONS 1/				13.26 %	13.49 %	12.77 %	13.41 %
1	AMERITECH OPERATING COMPANIES	18.22 %	18.27 %	16.78 %	13.39	14.80	12.79	13.00
	BELL ATLANTIC COMPANIES							
2	BELL ATLANTIC 2/	14.77	11.24	13.74	14.00	14.01	12.50	12.83
3	BELL ATLANTIC (NYNEX) 3/ NEW ENGLAND TELEPHONE AND TELEGRAPH CO. NEW YORK TELEPHONE	13.73	15.23	12.12	11.79	12.55	12.50	8.54 9.82
4	BELLSOUTH TELEPHONE COMPANIES	17.90	16.40	15.78	15.92	13.68	12.80	12.62
	SBC COMMUNICATIONS, INC.							
5	SOUTHWESTERN BELL TELEPHONE COMPANY 4/	10.32	11.63	13.38	13.01	12.91	11.80	10.75
6	NEVADA BELL	19.46	17.75	17.31	17.92	17.44	14.51	12.98
7	PACIFIC BELL	11.90	17.68	15.76	14.93	12.89	12.68	11.85
8	U.S. WEST COMMUNICATIONS, INC.	15.39	13.64	12.00	12.40	13.62	12.41	12.40
	GTE 5/ 6/							
9	GTE CALIFORNIA, INC. (CALIFORNIA CONTEL) 7/	19.09	17.63	16.03	12.19			
10	GTE CALIFORNIA, INC. (ARIZONA CONTEL) 7/	14.10	4.15	2.95	6.24			
11	GTE CALIFORNIA, INC. (NEVADA CONTEL) 7/ CONTEL OF CALIFORNIA, INC. 7/	30.98	25.50	19.15	27.39	15.43	8.51	11.87
12	GTE SOUTH INC. (KENTUCKY ONLY - COKY) 8/	6.94	4.49	4.79	5.56			
13	GTE SOUTH INC. (N. CAROLINA ONLY - CONC) 8/	16.44	11.98	14.16	10.75			
14	GTE SOUTH INC. (S. CAROLINA ONLY - COSC) 8/	24.97	17.40	12.32	9.77			
15	GTE SOUTH INC. (VIRGINIA ONLY - COVA) 8/	33.80	30.90	23.18	23.45			
16	GTE SYSTEMS OF THE SOUTH (COAL ONLY) 8/ GSTC - SOUTH (EAST SOUTH CONTEL) 8/	15.23	9.69	11.88	12.58	15.09	9.90	9.67
17	GTE NORTH INC. (ILLINOIS CONTEL) 9/	40.63	36.34	24.21	26.48			
18	GTE NORTH INC. (INDIANA CONTEL) 9/	29.21	29.02	23.27	22.44			
19	GTE MIDWEST INC. (CONTEL IOWA COIA + COSI) 9/	33.49	30.39	22.39	18.31			
20	GTE MIDWEST INC. (CONTEL MISSOURI COMO + COCM + COEM) 9/	11.92	11.97	9.57	10.79			
21	GTE ARKANSAS, INC. (COAR + COSA) 9/	17.48	19.13	18.24	17.44			
22	CONTEL OF MINNESOTA - COMN 9/ GSTC - CENTRAL (CENTRAL CONTEL) 9/	33.54	32.38	23.81	22.12	16.28	10.24	11.22
23	GTE NORTH INC. (COPA + COQS) 10/	36.92	40.55	36.38	32.60	22.33	17.11	12.79
24	GTE ALASKA, INC. (ALASKA GTE)	29.58	19.44	22.48	24.78	16.13	14.84	14.69
25	GTE CALIFORNIA INC. (CALIFORNIA GTE)	17.87	13.72	6.95	9.08	7.05	10.73	12.45
26	GTE FLORIDA INC. (FLORIDA GTE)	19.19	15.17	8.56	7.36	7.36	9.52	12.64
27	GTE HAWAIIAN TELEPHONE CO. INC. (HAWAII GTE)	10.68	9.42	7.87	8.15	9.18	8.98	11.75
28	GTE ILLINOIS + ALLTEL ILLINOIS (GTIL + GLIL)	22.83	18.36	14.69	17.12	13.77	12.60	12.65
29	GTE INDIANA + ALLTEL INDIANA (GTIN + GLIN)	24.25	26.23	18.80	18.21	14.50	14.17	14.16
30	GTE MICHIGAN + ALLTEL MICHIGAN (GTMI + GLMI)	16.80	14.85	11.45	11.10	9.82	14.21	12.89
31	GTE MIDWEST INC. (IOWA ONLY - GTIA) 11/	24.56	22.68	16.49	19.05			
32	CONTEL OF MINNESOTA - GTMN 11/ GTE NORTH INC. (TOTAL IA+MN GTE) 11/	6.03	(13.13)	(10.88)	(0.04)	13.16	13.69	9.97
33	GTE MIDWEST INC. (MISSOURI GTE)	16.63	19.84	17.18	18.20	13.48	13.99	13.30
34	GTE MIDWEST INC. (NEBRASKA GTE)	27.12	28.86	21.67	20.35	13.84	12.74	8.70
35	GTE NORTH INC. (OHIO GTE)	25.41	21.20	17.21	16.90	12.66	12.91	10.55
36	GTE NORTH INC. (PENNSYLVANIA GTE)	25.24	18.91	14.02	14.81	11.72	12.42	12.82
37	GTE NORTH INC. (WISCONSIN GTE)	18.36	17.99	13.96	13.65	13.85	13.00	10.43
38	GTE NORTHWEST INC. (OREGON ONLY - GTOR) 12/ 14/	28.29	23.50	18.89	16.20			
39	GTE NORTHWEST INC. (WASHINGTON ONLY - GTWA) 12/	24.43	21.60	15.87	13.67			
40	WEST COAST TELEPHONE CO. OF CALIFORNIA - GNCA 12/ GTE NORTHWEST INC. (TOTAL OR+WA+NWCA GTE) 12/	(28.51)	(24.03)	(16.99)	(15.37)	9.90	10.82	11.83
41	GTE NORTHWEST INC. (IDAHO ONLY - GTID) 13/ GTE NORTHWEST INC. (MONTANA ONLY - GTMT) 13/ GTE NORTHWEST INC. (TOTAL ID + MT GTE) 13/	30.91	23.94	20.78	19.60 15.37	16.00	17.34	14.53
42	GTE NORTHWEST INC. (CONTEL WASHINGTON ONLY - COWA) 14/ GTE NORTHWEST INC. (CONTEL OREGON - COOR) 12/ 14/ GTE SYSTEMS OF NORTHWEST (NORTHWEST CONTEL) 14/	31.71	29.43	22.24	18.07 9.18	18.09	10.26	8.96
43	GTE SOUTH INC. (ALABAMA ONLY - GTAL) 15/	23.54	17.68	11.39	11.83			
44	GTE SOUTH INC. (KENTUCKY ONLY - GTKY) 15/	21.29	18.46	13.89	10.96			
45	GTE SOUTH INC. (NORTH CAROLINA ONLY - GTNC) 15/	24.56	23.83	14.99	19.02			

TABLE 14.1

INTERSTATE RATE OF RETURN SUMMARY - CONTINUED
YEARS 1991 THROUGH 1997
PRICE CAP COMPANIES

FINAL REPORTS FOR 1991, 1992, 1993, 1994, 1995, 1996 AND INITIAL REPORT FOR 1997

REPORTING ENTITY		1997	1996	1995	1994	1993	1992	1991
46	GTE SOUTH INC. (SOUTH CAROLINA ONLY - GTSC) 15/	24.06	25.70	18.93	17.60			
47	GTE SOUTH INC. (VIRGINIA ONLY - GTVA) 15/	16.04	11.07	10.91	9.29			
	GTE SOUTH INC. (TOTAL SOUTH GTE) 15/					11.91	12.61	11.50
48	GTE SOUTHWEST INC. (ARKANSAS ONLY - GTAR) 16/	3.55	(1.97)	(1.57)	0.65			
49	GTE SOUTHWEST INC. (NEW MEXICO ONLY - GTNM) 16/	24.24	24.60	17.18	10.00			
50	GTE SOUTHWEST INC. (OKLAHOMA ONLY - GTOK) 16/	18.46	10.77	6.70	6.44			
51	GTE SOUTHWEST INC. (TEXAS ONLY - GTTX) 16/	15.04	11.53	7.11	7.24			
	GTE SOUTHWEST INC. (TOTAL SOUTHWEST GTE) 16/					9.00	11.52	10.22
52	GTE SOUTHWEST INC. (TEXAS CONTEL) 10/	18.27	22.42	14.62	8.29	17.89	9.64	10.22
53	GTE SOUTHWEST INC. (CONTEL NEW MEXICO) 17/	48.86	42.53	47.29	27.57			
	CONTEL OF THE WEST dba GTE WEST (ARIZONA ONLY - COWZ) 17/				14.86			
	GTE WEST (WEST CONTEL) 17/					17.26	13.81	10.51
54	MICRONESIAN TELECOMMUNICATIONS CORP. 18/	20.06	15.49	7.49	2.53			
	GTE NEW YORK (NEW YORK CONTEL) 19/					12.10	8.60	9.90
	GSTC - NORTH (EAST NORTH CONTEL) 19/					15.51	10.15	10.36
SPRINT								
55	SPRINT LOCAL TELEPHONE COMPANIES - FLORIDA	20.05						
	CENTRAL TELEPHONE OF FLORIDA 20/		17.85	17.16	15.93	14.66	11.44	
	UNITED TELEPHONE CO. OF FLORIDA		19.79	19.28	17.63	14.44	12.27	13.00
56	CENTRAL TELEPHONE OF ILLINOIS 20/	18.92	18.40	19.55	18.87	10.18	11.54	
57	CENTRAL TELEPHONE OF NEVADA 20/	17.07	20.42	20.46	18.90	14.23	12.44	
58	CENTRAL TELEPHONE OF NORTH CAROLINA 20/	16.55	15.75	15.36	14.19	11.97	11.29	
59	CENTRAL TELEPHONE OF TEXAS 20/	43.40	21.58	21.81	18.39	16.19	14.94	
60	CENTRAL TELEPHONE OF VIRGINIA 20/	16.01	17.46	15.87	14.30	15.55	12.91	
61	CAROLINA TELEPHONE AND TELEGRAPH COMPANY	16.53	15.38	17.77	15.39	11.10	10.14	11.43
62	UNITED TELEPHONE CO. OF INDIANA, INC.	26.13	24.30	20.33	18.41	15.55	14.93	14.06
63	UNITED TELEPHONE - EASTERN (NJ & PA)	17.36	17.42	14.87	16.12	13.98	12.32	11.71
64	UNITED TELEPHONE CO. OF OHIO	13.17	16.12	15.93	16.54	13.15	12.33	12.75
65	UNITED TELEPHONE CO. OF THE NORTHWEST	30.59	34.55	34.17	29.32	19.39	17.72	17.27
66	UNITED TELEPHONE-MIDWEST (MO,KS,MN,NE,WY,TX)	15.50	21.52	19.64	17.44	13.92	15.35	14.57
67	UNITED TELEPHONE - SOUTHEAST (TN, VA & SC)	18.89	20.66	19.05	19.17	13.39	13.48	13.66
ALL OTHER COMPANIES								
68	ALIANTE COMMUNICATIONS COMPANY 20/ 21/	12.27	14.95	16.09	15.47	14.95	12.36	
69	CINCINNATI BELL TELEPHONE COMPANY 22/	20.04						
70	CITIZENS TELECOMMUNICATIONS COS. (TARIFF 1) 23/	10.31	15.42					
71	CITIZENS TELECOMMUNICATIONS COS. (TARIFF 2) 23/	13.19	13.58					
72	FRONTIER TELEPHONE OF ROCHESTER, INC. 24/ 25/	13.19	10.20	11.87	12.02	11.63	12.11	11.82
73	FRONTIER TIER 2 CONCURRING COMPANIES 25/	31.93	26.91	19.32	17.69	16.42		
74	FRONTIER COMMUNICATIONS OF MINNESOTA & IOWA 25/ 26/	28.26	23.71	21.90	19.65	14.99	13.65	13.71
75	SOUTHERN NEW ENGLAND TELEPHONE COMPANY 24/	12.70	11.64	11.58	11.34	11.52	12.90	8.56
MAXIMUM RATE OF RETURN		48.86 %	42.53 %	47.29 %	32.60 %	22.33 %	17.72 %	17.27 %
MINIMUM RATE OF RETURN		(28.51)	(24.03)	(16.99)	(15.37)	7.05	8.51	8.54
WEIGHTED ARITHMETIC MEAN		15.64	15.15	14.02	13.58	13.12	12.42	11.78
STANDARD DEVIATION		4.09	3.64	3.03	2.59	1.76	0.96	1.49

NOTES FOR TABLE 14.1.

- 1/ AT&T COMMUNICATIONS FILED INDIVIDUAL REPORTS FOR 1991 - 1994 NINETY DAYS AFTER END OF EACH CALENDAR YEAR. THE LOCAL TELEPHONE COMPANIES FILED FINAL REPORTS FOR EACH YEAR FIFTEEN MONTHS AFTER THE CALENDAR YEAR.
- 2/ BELL ATLANTIC FILED A REVISED 1997 REPORT APRIL 29, 1998.
- 3/ IN 1992, NYNEX STARTED TO FILE A COMBINED REPORT.
- 4/ SOUTHWESTERN BELL TELEPHONE COMPANY FILED A REVISED 1997 REPORT MAY 1, 1998.
- 5/ IT SHOULD BE NOTED THAT GTE IN 1993 CONSOLIDATED VARIOUS STUDY AREAS SO THAT SOME INDIVIDUAL COMPANY REPORTS MAY NOT BE TOTALLY CONSISTENT WITH PRIOR YEARS.
- 6/ IN 1994, GTE REPORTED MANY STUDY AREAS BY STATE. FOR THE GTE COMPANIES, GTE OF ALASKA, CALIFORNIA, FLORIDA, HAWAII, ILLINOIS, INDIANA, MICHIGAN, MISSOURI, NEBRASKA, OHIO, PENNSYLVANIA, AND WISCONSIN ARE THE ONLY STUDY AREAS THAT APPEAR CONSISTENT BETWEEN 1993 AND 1994.
- 7/ IN 1994, CONTEL OF CALIFORNIA, INC., WAS SEPARATED AND BECAME CONTEL OF CALIFORNIA (CALIFORNIA ONLY - COCA); CONTEL OF CALIFORNIA (AZ ONLY - COAZ); AND CONTEL OF NEVADA (NV ONLY - CONV). NAMES WERE CHANGED TO GTE CALIFORNIA, INC., (CALIFORNIA CONTEL), GTE CALIFORNIA, INC., (ARIZONA CONTEL), AND GTE CALIFORNIA, INC., (NEVADA CONTEL) IN 1996.
- 8/ IN 1994, GSTC - SOUTH (EAST SOUTH CONTEL) WAS SEPARATED AND BECAME GTE SOUTH, INC., (KENTUCKY ONLY - COKY); GTE SOUTH, INC. (N. CAROLINA ONLY - CONC); GTE SOUTH, INC. (S. CAROLINA ONLY - COSC); GTE SOUTH, INC., (VIRGINIA ONLY - COVA); AND GTE SYSTEMS OF THE SOUTH (COAL ONLY). THE PROPERTY FOR GEORGIA WHICH WAS ALSO INCLUDED IN 1993 WAS SOLD AND WAS NOT INCLUDED IN 1994.
- 9/ IN 1994, GSTC - CENTRAL REGION (CENTRAL CONTEL) WAS SEPARATED AND BECAME GTE NORTH, INC., (ILLINOIS CONTEL); GTE NORTH, INC., (INDIANA CONTEL); GTE MIDWEST, INC., (CONTEL IOWA COIA + COSI); GTE MIDWEST, INC., (CONTEL MISSOURI COMO + COCM + COEM); TOTAL CONTEL ARKANSAS (COAR + COSA); AND CONTEL OF MINNESOTA - COMN. IN 1996, TOTAL CONTEL ARKANSAS NAME CHANGED TO GTE ARKANSAS, INC.
- 10/ FOR THE GTE CONTEL COMPANIES, GTE PENNSYLVANIA (CONTEL) AND GTE TEXAS (CONTEL) ARE THE TWO COMPANIES THAT APPEAR CONSISTENT BETWEEN 1993 AND 1994. IN 1995, GTE OF PENNSYLVANIA (CONTEL) NAME CHANGED TO GTE NORTH, INC., (COPA + COQS), AND GTE TEXAS (CONTEL) NAME CHANGED TO GTE SOUTHWEST, INC., (TEXAS CONTEL).
- 11/ IN 1994, GTE OF THE NORTH, INC., (TOTAL IA + MN GTE) WAS SEPARATED AND BECAME GTE MIDWEST, INC. (IOWA ONLY - GTIA) AND CONTEL MINNESOTA - GTMN.
- 12/ IN 1994, GTE OF THE NORTHWEST, INC., (TOTAL OR+WA+NWCA GTE) WAS SEPARATED AND BECAME GTE OF THE NORTHWEST, INC. (OREGON ONLY - GTOR); GTE OF THE NORTHWEST, INC., (WASHINGTON ONLY - GTWA); AND WEST COAST TELEPHONE CO. OF CALIFORNIA - GNCA. IN 1995 GTE OF THE NORTHWEST, INC. (CONTEL OREGON - COOR) MERGED WITH GTE OF THE NORTHWEST, INC. (OREGON ONLY - GTOR).
- 13/ IN 1994, GTE OF THE NORTHWEST, INC., (TOTAL ID + MT GTE) WAS SEPARATED AND BECAME GTE OF THE NORTHWEST, INC. (IDAHO ONLY - GTID) AND GTE OF THE NORTHWEST, INC., (MONTANA ONLY - GTMT). GTE OF THE NORTHWEST, INC., (MONTANA ONLY - GTMT) DID NOT FILE A 1995 REPORT SINCE THEIR PROPERTY WAS SOLD.
- 14/ IN 1994, GTE SYSTEMS OF NORTHWEST (NORTHWEST CONTEL) WAS SEPARATED AND BECAME GTE NORTHWEST, INC., (CONTEL OREGON - COOR); AND GTE NORTHWEST, INC., (CONTEL WASHINGTON ONLY - COWA). IN 1995, GTE OF THE NORTHWEST, INC., (CONTEL OREGON - COOR) MERGED WITH GTE OF THE NORTHWEST, INC. (OREGON ONLY - GTOR).
- 15/ IN 1994, GTE SOUTH, INC., (TOTAL SOUTH GTE) WAS SEPARATED AND BECAME GTE SOUTH, INC. (ALABAMA ONLY - GTAL); GTE SOUTH, INC., (KENTUCKY ONLY - GTKY); GTE SOUTH, INC., (NORTH CAROLINA ONLY - GTNC); GTE SOUTH, INC., (SOUTH CAROLINA ONLY - GTSC); AND GTE SOUTH, INC., (VIRGINIA ONLY - GTVA). THE PROPERTIES FOR GEORGIA, TENNESSEE, AND WEST VIRGINIA WHICH WERE INCLUDED IN GTE SOUTH, INC., IN 1993, WERE NOT INCLUDED IN 1994 BECAUSE THESE PROPERTIES WERE SOLD.
- 16/ IN 1994, GTE SOUTHWEST, INC., (TOTAL SOUTHWEST GTE) WAS SEPARATED AND BECAME GTE SOUTHWEST, INC. (ARKANSAS ONLY - GTAR); GTE SOUTHWEST, INC., (NEW MEXICO ONLY - GTNM); GTE SOUTHWEST, INC., (OKLAHOMA ONLY - GTOK); AND GTE SOUTHWEST, INC., (TEXAS ONLY - GTTX).
- 17/ IN 1994, GTE WEST (WEST CONTEL) WAS SEPARATED AND BECAME CONTEL OF THE WEST (NEW MEXICO ONLY - CONM); AND CONTEL OF THE WEST dba GTE WEST (ARIZONA ONLY - COWZ). UTAH WHICH WAS INCLUDED IN 1993 WAS NOT INCLUDED IN 1994; THEIR PROPERTY WAS SOLD. CONTEL OF THE WEST dba GTE WEST (ARIZONA ONLY - COWZ) PROPERTY WAS SOLD SO DID NOT FILE A 1995 REPORT. IN 1995, CONTEL OF THE WEST (NEW MEXICO ONLY - CONM) CHANGED ITS NAME TO GTE SOUTHWEST, INC., (CONTEL NEW MEXICO.)
- 18/ MICRONESIAN TELECOMMUNICATIONS CORP. FILED A RATE OF RETURN REPORT FOR THE FIRST TIME IN 1994.
- 19/ GTE NEW YORK (NEW YORK CONTEL) AND GSTC - NORTH (EAST NORTH CONTEL) DID NOT FILE IN 1994; THEIR PROPERTY WAS SOLD.
- 20/ THE CENTEL COMPANIES AND LINCOLN TELEPHONE AND TELEGRAPH COMPANY REPORTED SUBJECT TO PRICE CAPS BEGINNING 7/1/93. RATE OF RETURN FOR 1993 IS FOR THE FILING PERIOD JULY THROUGH DECEMBER. FOR 1992, INFORMATION FOR THE CENTEL COMPANIES AND FOR THE LINCOLN TELEPHONE & TELEGRAPH COMPANY IS FROM THEIR FINAL NON-PRICE CAP REPORT FILED 9/30/93 FOR THE TWO-YEAR 1992 MONITORING PERIOD 1991-1992.
- 21/ IN 1996, LINCOLN TELEPHONE AND TELEGRAPH COMPANY CHANGED ITS NAME TO ALIANT COMMUNICATIONS COMPANY.
- 22/ CINCINNATI BELL TELEPHONE COMPANY WENT PRICE CAP IN 1997.
- 23/ THE CITIZENS TELECOMMUNICATIONS COS. BECAME PRICE CAP JULY 1, 1996; REPORTING PERIOD FOR 1996 IS JULY 1, 1996 - DECEMBER 31, 1996. RATES FOR 1996 ARE FROM THE INITIAL REPORT.
- 24/ ROCHESTER TELEPHONE CORPORATION AND SOUTHERN NEW ENGLAND TELEPHONE COMPANY REPORTED SUBJECT TO PRICE CAPS BEGINNING 7/1/91. THE RATE OF RETURN REPORT FOR EACH IS FOR THE FILING PERIOD JULY 1, 1991 THROUGH DECEMBER 31, 1991.
- 25/ THE ROCHESTER TELEPHONE CORPORATION, ROCHESTER TELEPHONE SUBSIDIARIES AND FRONTIER COMMUNICATIONS OF MINNESOTA & IOWA (NAME CHANGED IN 1994 FROM VISTA COMMUNICATIONS CO. OF MINNESOTA AND IOWA) DID NOT HAVE ANY CHANGES TO THEIR ORIGINAL REPORT SO THEY DID NOT FILE A FINAL REPORT ON MARCH 31, 1995 FOR 1993.
- 26/ VISTA TELEPHONE COMPANIES, NOW KNOWN AS FRONTIER COMMUNICATIONS OF MINNESOTA AND IOWA, FILED BY ROCHESTER TELEPHONE COMPANY AS OF 7/1/92. FOR 1992, THE RATE OF RETURN IS FOR 7/1/92-12/31/92 WHEN THEY REPORTED SUBJECT TO PRICE CAP REGULATION. FOR 1991, VISTA FILED A RATE OF RETURN REPORT FOR VISTA TELEPHONE COMPANY OF IOWA AND VISTA TELEPHONE TELEPHONE COMPANY OF MINNESOTA; THESE HAVE BEEN COMBINED IN THE TABLE.

RESIDENTIAL TELEPHONE USAGE:

Bill Harvesting data collected by PNR and Associates, Inc. (PNR) provide information on phone usage in the long distance residential market, as opposed to the overall market for toll service. PNR is an economic research and consulting firm located in Jenkinstown, Pennsylvania. PNR conducts nationwide surveys of residential telephone usage and household expenditures on telephone service. These surveys, in which households are asked to mail copies of their phone bills for one month to PNR, are called Bill Harvesting studies. PNR has donated databases containing information on residential phone usage to the Commission.

The Bill Harvesting Data reflect calls itemized on residential telephone bills. Thus, 800 calls made from the residence are not included, nor are collect calls made from the residence. In contrast, 800 calls received, and shown on the household monthly bill, are included, as are collect calls received.

Table 15.1 shows the percentage of residential long distance telephone usage that is intrastate, interstate and international. In 1997, 38% of residential phone calls were interstate as opposed to 50% of minutes. Table 15.2 shows the average number of minutes on household telephone bills and the percentage of households that make telephone calls in a given month. In 1997, the average household had 149 minutes of toll calling and the median household had 84 minutes. Eight-eight percent of households made at least one interstate, intrastate or international toll call.

Table 15.3 shows distribution of residential long distance calls by call duration. The average residential call last almost nine minutes despite nearly one-third of toll calls lasting one minute or less. Table 15.4 shows the distance distribution of long distance calls. The average distance of an interstate call is 695 miles as opposed to 56 miles for an intrastate call. Table 15.5 shows that the average duration of both interstate and intrastate calls increases with the distance of the call.

Table 15.6 shows the percentage of residential long distance minutes by day of week. In the 1997 survey, 33% of residential minutes were on weekdays between 7:00 a.m. and 7:00 p.m., and 36% of residential minutes were on weekends.

TABLE 15.1
DISTRIBUTION OF RESIDENTIAL TOLL CALLS AND MINUTES

TYPE	1995	1996	1997
CALLS			
INTRALATA-INTRASTATE	41 %	40 %	38 %
INTRALATA-INTERSTATE	1	1	1
INTERLATA-INTRASTATE	19	18	19
INTERLATA-INTERSTATE	37	35	37
INTERNATIONAL	1	1	1
OTHERS*	2	5	5
TOTAL CALLS	197,787	165,465	483,685
MINUTES			
INTRALATA-INTRASTATE	28 %	29 %	27 %
INTRALATA-INTERSTATE	1	1	1
INTERLATA-INTRASTATE	18	18	18
INTERLATA-INTERSTATE	50	47	49
INTERNATIONAL	2	1	1
OTHERS*	1	4	4
TOTAL MINUTES	1,493,674	1,210,675	3,673,315

Source: PNR and Associates Inc., Bill Harvesting II and III and PNR and Associates Inc. and Market Facts I
TLC MarketShare Monitor.

* 800 calls billed to residential customers, 900 calls and calls that cannot be classified.

Figures may not total due to rounding.

TABLE 15.2
AVERAGE RESIDENTIAL MONTHLY TOLL CALLING: 1997

TYPE	AVERAGE MINUTES	PERCENT OF HOUSEHOLDS WITH TOLL CALLS DURING MONTH
INTRALATA-INTRASTATE	41	57
INTRALATA-INTERSTATE	1	3
INTERLATA-INTRASTATE	27	43
INTERLATA-INTERSTATE	73	67
INTERNATIONAL	2	5
OTHERS*	6	13
ALL TYPES	149	88

Source: PNR and Associates Inc., and Market Facts, Inc., MarketShare Monitor.

* 800 calls billed to residential customers, 900 calls and calls that cannot be classified.

Figures may not total due to rounding.

TABLE 15.3

DURATION OF RESIDENTIAL LONG DISTANCE CALLS*

DURATION OF CALL (IN MINUTES)	1995	1996	1997
1	32.0 %	32.6 %	33.3 %
2	11.2	11.3	11.3
3	6.7	7.3	7.4
4	4.8	4.8	4.9
5	4.0	4.0	4.0
6	3.3	3.3	3.2
7	2.9	2.9	2.8
8	2.7	2.6	2.5
9	2.3	2.4	2.3
10	2.3	2.2	2.1
11-15	8.2	8.1	8.0
16-20	5.8	5.6	5.4
21-25	4.0	3.7	3.7
26-30	2.8	2.5	2.6
31-45	4.1	4.0	3.9
46-60	1.6	1.5	1.5
GREATER THAN 60	1.3	1.1	1.2
AVERAGE DURATION	9.4	8.9	8.9
MEDIAN DURATION	4.0	3.0	3.0

Source: PNR and Associates Inc., Bill Harvesting II and III, and PNR and Associates Inc. and Market Facts Inc., MarketShare Monitor.

Sample: 110,734 calls for 1995, 94,830 calls for 1996, and 295,498 calls for 1997.

* Direct dial calls carried by long distance carriers. Includes intrastate, interstate and international calls. Excludes intrastate calls carried by local exchange carrier.

TABLE 15.4
DISTANCE OF RESIDENTIAL LONG DISTANCE CALLS IN 1997*

DISTANCE OF CALL (IN MILES)	INTERSTATE	INTRASTATE	ALL CALLS
1 - 10	1.6 %	7.3 %	5.1 %
11 - 22	4.3	30.7	20.2
23 - 55	7.3	33.7	23.2
56 - 124	8.0	16.8	13.3
125 - 292	16.6	9.2	12.1
293 - 430	9.2	1.6	4.6
431 - 925	23.5	0.6	9.7
926 - 1,910	21.4	0.0	8.5
GREATER THAN 1,910	8.0	0.0	3.2
AVERAGE DISTANCE	695	56	310
MEDIAN DISTANCE	480	28	60

Source: PNR and Associates Inc., and Market Facts Inc., MarketShare Monitor.

Sample: 412,941 calls.

* Direct dial calls carried by long distance carriers and local exchange carriers.

Includes only domestic calls.

TABLE 15.5
DURATION OF RESIDENTIAL LONG DISTANCE CALL BY DISTANCE IN 1997*

DISTANCE OF CALL (IN MILES)	AVERAGE DURATION INTERSTATE CALLS (MINUTES)	AVERAGE DURATION INTRASTATE CALLS (MINUTES)	AVERAGE DURATION ALL CALLS (MINUTES)
1 - 10	4.7	4.6	4.6
11 - 22	5.4	5.1	5.1
23 - 55	6.2	5.9	5.9
56 - 124	8.6	7.4	7.7
125 - 292	9.7	9.1	9.4
293 - 430	10.7	9.4	10.4
431 - 925	12.0	11.0	11.9
926 - 1,910	11.9	N/A	11.9
GREATER THAN 1,910	11.2	N/A	11.2
AVERAGE MINUTES	10.3	6.2	7.8
MEDIAN MINUTES	4.0	2.0	3.0

Source: PNR and Associates Inc., and Market Facts Inc., MarketShare Monitor

Sample: 412,941 calls.

* Direct dial calls carried by long distance carriers and local exchange carriers.

Includes only domestic calls.

N/A Not Applicable.

TABLE 15.6
DISTRIBUTION OF RESIDENTIAL LONG DISTANCE MINUTES BY DAY OF
WEEK IN 1997*

DAY	7:00 AM-6:59 PM	7:00 PM-6:59 AM	TOTAL
MONDAY	6.6 %	6.8 %	13.4 %
TUESDAY	6.2	6.5	12.7
WEDNESDAY	6.5	6.6	13.2
THURSDAY	6.8	6.4	13.2
FRIDAY	6.4	5.0	11.4
SATURDAY	11.3	4.7	16.0
SUNDAY	13.0	7.1	20.0
TOTAL	56.7	43.3	100.0

Source: PNR and Associates Inc., and Market Facts Inc., MarketShare Monitor.

* Direct dial calls carried by long distance carrier. Includes intrastate, interstate and international calls. Excludes intrastate calls carried by local exchange carrier.

Sample Size: 285,498 calls.

SUBSCRIBERSHIP:

Under contract with the FCC, the Bureau of the Census includes questions on telephones as part of its Current Population Survey. This survey, which monitors demographic trends between the decennial censuses, has several strengths: it is conducted regularly by an expert agency, the sample is very large, and the questions are consistent. Thus, changes in the results can be compared over time with a great deal of confidence.

Eighteen million households have been added to the nation's telephone system since these surveys began in November 1983 -- reflecting both an increase in the total number of households and a small, but statistically significant, increase in the percentage of households that subscribe to telephone service.

Because of smaller sample sizes, state-by-state data are subject to greater sampling errors than the national data shown in Table 16.1. Consequently, the state-by-state data shown in Table 16.2 are based on annual average penetration rates.

Prior to 1980, historical estimates of telephone penetration were based on a comparison of the number of residential main stations to the number of households. These estimates became less reliable at that point because of the emergence of an increasing number of households with multiple phone lines. In the 1980 decennial census, the question "Do you have a telephone?" was added to the long-form questionnaire. The 1980 and 1990 percentages in Table 16.3 are based on those responses. With the telephone companies no longer owning the telephone instruments, however, it is possible for someone to have a telephone but not have service. This may account for some of the discrepancy between the 1990 percentages in Tables 16.1 and 16.3.

For other countries of the world, telephone development is often measured as the number of access lines per 100 people. This measure includes both residential and business lines. Historical estimates for the United States, using the decennial census population counts, are shown in Table 16.3.

To help evaluate the effect of the Commission's lifeline program on telephone penetration, Table 16.4 compares penetration rates for states with and without lifeline programs. As can be seen in the table, penetration increases have been greater on average in states with lifeline programs than in states without lifeline programs, both for all households and for low-income households. Between March 1984 and March 1997, the overall average penetration rate for states with lifeline programs increased by 2.4%, which is statistically significant. The increase for states without programs is 1.0%, which is not statistically significant. For households with incomes under \$10,000 (expressed in 1984 dollars), which would be the households primarily affected by the lifeline programs, the average increase was 6.5% for states with programs, again statistically significant, versus 3.3% for states without programs, also statistically significant.

TABLE 16.1
HOUSEHOLD TELEPHONE SUBSCRIBERSHIP IN THE UNITED STATES

	HOUSEHOLDS (MILLIONS)	HOUSEHOLDS WITH TELEPHONES (MILLIONS)	PERCENTAGE WITH TELEPHONES	HOUSEHOLDS WITHOUT TELEPHONES (MILLIONS)	PERCENTAGE WITHOUT TELEPHONES
1983 NOVEMBER	85.8	78.4	91.4 %	7.4	8.6 %
1984 MARCH	86.0	78.9	91.8	7.1	8.2
JULY	86.6	79.3	91.6	7.3	8.4
NOVEMBER	87.4	79.9	91.4	7.5	8.6
1985 MARCH	87.4	80.2	91.8	7.2	8.2
JULY	88.2	81.0	91.8	7.2	8.2
NOVEMBER	88.8	81.6	91.9	7.2	8.1
1986 MARCH	89.0	82.1	92.2	6.9	7.8
JULY	89.5	82.5	92.2	7.0	7.8
NOVEMBER	89.9	83.1	92.4	6.8	7.6
1987 MARCH	90.2	83.4	92.5	6.8	7.5
JULY	90.7	83.7	92.3	7.0	7.7
NOVEMBER	91.3	84.3	92.3	7.0	7.7
1988 MARCH	91.8	85.3	92.9	6.5	7.1
JULY	92.4	85.7	92.8	6.7	7.2
NOVEMBER	92.6	85.7	92.5	6.9	7.5
1989 MARCH	93.6	87.0	93.0	6.6	7.0
JULY	93.8	87.5	93.3	6.3	6.7
NOVEMBER	93.9	87.3	93.0	6.6	7.0
1990 MARCH	94.2	87.9	93.3	6.3	6.7
JULY	94.8	88.4	93.3	6.4	6.7
NOVEMBER	94.7	88.4	93.3	6.3	6.7
1991 MARCH	95.3	89.2	93.6	6.1	6.4
JULY	95.5	89.1	93.3	6.4	6.7
NOVEMBER	95.7	89.4	93.4	6.3	6.6
1992 MARCH	96.6	90.7	93.9	5.9	6.1
JULY	96.6	90.6	93.8	6.0	6.2
NOVEMBER	97.0	91.0	93.8	6.0	6.2
1993 MARCH	97.3	91.6	94.2	5.7	5.8
JULY	97.9	92.2	94.2	5.7	5.8
NOVEMBER	98.8	93.0	94.2	5.8	5.8
1994 MARCH	98.1	92.1	93.9	6.0	6.1
JULY	98.6	92.4	93.7	6.2	6.3
NOVEMBER	99.8	93.7	93.8	6.2	6.2
1995 MARCH	99.9	93.8	93.9	6.1	6.1
JULY	100.0	94.0	94.0	6.0	6.0
NOVEMBER	100.4	94.2	93.9	6.2	6.1
1996 MARCH	100.6	94.4	93.8	6.2	6.2
JULY	101.2	95.0	93.9	6.1	6.1
NOVEMBER	101.3	95.1	93.9	6.2	6.1
1997 MARCH	102.0	95.8	93.9	6.2	6.1
JULY	102.3	96.1	93.9	6.2	6.1
NOVEMBER	102.8	96.5	93.8	6.3	6.2
1998 MARCH	103.4	97.4	94.1	6.1	5.9

SOURCE: INDUSTRY ANALYSIS DIVISION, *TELEPHONE SUBSCRIBERSHIP IN THE UNITED STATES*.

TABLE 16.2

TELEPHONE PENETRATION BY STATE
(ANNUAL AVERAGE PERCENTAGE OF HOUSEHOLDS WITH TELEPHONE SERVICE)

STATE	1984	1997	CHANGE
ALABAMA	88.4 %	92.3 %	3.9 % *
ALASKA	86.5	94.5	8.0 *
ARIZONA	86.9	91.6	4.7 *
ARKANSAS	86.6	89.8	3.2
CALIFORNIA	92.5	94.3	1.8 *
COLORADO	93.2	95.9	2.6 *
CONNECTICUT	95.5	94.2	-1.3
DELAWARE	94.3	95.7	1.5
DISTRICT OF COLUMBIA	94.9	90.8	-4.1 **
FLORIDA	88.7	92.8	4.1 *
GEORGIA	86.2	92.0	5.8 *
HAWAII	93.5	94.5	0.9
IDAHO	90.7	94.0	3.3 *
ILLINOIS	94.2	92.2	-2.0 **
INDIANA	91.6	93.8	2.2 *
IOWA	96.2	96.7	0.5
KANSAS	94.3	94.0	-0.4
KENTUCKY	88.1	93.2	5.0 *
LOUISIANA	89.7	91.0	1.4
MAINE	93.4	96.1	2.7 *
MARYLAND	95.7	95.7	0.0
MASSACHUSETTS	95.9	95.4	-0.5
MICHIGAN	92.8	94.3	1.4
MINNESOTA	95.8	96.9	1.1
MISSISSIPPI	82.4	89.2	6.8 *
MISSOURI	91.5	95.0	3.6 *
MONTANA	91.0	93.7	2.7
NEBRASKA	95.7	97.1	1.4
NEVADA	90.4	94.1	3.8 *
NEW HAMPSHIRE	94.3	96.5	2.2
NEW JERSEY	94.8	94.9	0.1
NEW MEXICO	82.0	88.1	6.1 *
NEW YORK	91.8	94.2	2.4 *
NORTH CAROLINA	88.3	93.1	4.8 *
NORTH DAKOTA	94.6	95.8	1.2
OHIO	92.4	94.6	2.1 *
OKLAHOMA	90.3	91.4	1.2
OREGON	90.6	95.6	5.0 *
PENNSYLVANIA	94.9	97.1	2.3 *
RHODE ISLAND	93.6	94.5	0.8
SOUTH CAROLINA	83.7	92.5	8.9 *
SOUTH DAKOTA	93.2	93.9	0.7
TENNESSEE	88.5	94.5	6.0 *
TEXAS	88.4	91.3	2.9 *
UTAH	92.5	96.9	4.4 *
VERMONT	92.3	95.1	2.8
VIRGINIA	93.1	94.5	1.5
WASHINGTON	93.0	95.9	2.9 *
WEST VIRGINIA	87.7	93.2	5.5 *
WISCONSIN	95.2	96.3	1.1
WYOMING	89.9	93.4	3.5 *
TOTAL UNITED STATES	91.6	93.9	2.3 *

SOURCE: INDUSTRY ANALYSIS DIVISION, *TELEPHONE SUBSCRIBERSHIP IN THE UNITED STATES*.

* INCREASE IS STATISTICALLY SIGNIFICANT AT THE 95% CONFIDENCE LEVEL.

** DECREASE IS STATISTICALLY SIGNIFICANT AT THE 95% CONFIDENCE LEVEL.

CHANGES MAY NOT BE THE SAME AS CALCULATED DIFFERENCES, DUE TO ROUNDING.

TABLE 16.3

HISTORICAL TELEPHONE PENETRATION ESTIMATES

Year	Percentage of Households with Telephones	Access Lines per 100 Population
1920	35.0 %	9.6
1930	40.9	12.5
1940	36.9	12.7
1950	61.8	21.7
1960	78.3	27.6
1970	90.5	35.0
1980	92.9	46.2
1990	94.8	54.8

Sources: FCC staff estimates based on data from the Bureau of the Census, *Historical Statistics of the United States, Colonial Times to 1970*, Part 2, page 783, for all percentage data except 1980 and 1990, which are from the decennial censuses. Access line data for 1920 through 1970 are estimated by multiplying the number of telephones by the proportion of main plus equivalent main stations to total telephones for the Bell System. Prior to 1950, the 1950 proportion is used. For 1980 and 1990, access lines reported by USTA are used.

TABLE 16.4

COMPARISON OF PENETRATION RATES FOR STATES WITH AND WITHOUT LIFELINE PROGRAMS

ALL HOUSEHOLDS			
	March 1984	March 1997	Change
States with Lifeline Programs	91.5 %	93.9 %	2.4 % *
States without Lifeline Programs	93.3	94.4	1.0
Total United States	91.8	94.0	2.1 *
HOUSEHOLDS WITH INCOMES UNDER \$10,000 #			
States with Lifeline Programs	79.3 %	85.8 %	6.5 % *
States without Lifeline Programs	83.6	86.9	3.3 *
Total United States	80.1	86.0	5.9 *

Source: INDUSTRY ANALYSIS DIVISION, *Telephone Penetration by Income by State*.

* Change is statistically significant at the 95% confidence level.

Income expressed in March 1984 dollars. \$10,000 in March 1984 dollars is equivalent to \$15,595 in March 1997 dollars.

Changes may not be the same as calculated differences, due to rounding.

TECHNOLOGY DEVELOPMENT:

1. Central Office Technology:

During the 1980s, telephone companies replaced most of their older electromechanical switches with computerized equipment. In the telephone industry, these computers are referred to as stored program control switches. Switches with the most current technologies are fully digital. That is, computers are used to switch calls and telephone conversations are converted to a digital form before being passed through the switch and later reconverted to their original analog form. Some offices are of an intermediate variety: the switching function is done by computer but the calls continue to be processed in their analog form. The spread of these technologies throughout the Bell operating companies (BOCs) is shown in Table 17.1.

Newer signaling systems have been developed that permit calls to be set up more quickly and efficiently. In the late 1980s, telephone company switching offices began to be converted to the newest signaling system, Signaling System 7. For several years the telephone industry has been working on an Integrated Systems Digital Network (ISDN). One of the attractions of ISDN is that ordinary local telephone lines (copper loops) can transport high-speed data between computers and handle more than one telephone conversation at a time. The number of BOC switching offices and the lines served by offices with these features are shown in Table 17.2. Of course, not all of the lines served by ISDN-compatible switching offices are actually receiving ISDN service.

2. Transmission Technology:

The BOCs file data on technology as part of their ARMIS reports. (ARMIS is an acronym for the Automated Reporting Management Information System.) Each telephone company has a network of transmission paths or carrier links tying together their switching offices. As indicated in Table 17.3, fiber optic cables have rapidly replaced copper to provide these links. From 1990 to 1997, the proportion of fiber has grown from 60% to 95%.

Although fiber technology was first used for interoffice transmission facilities, the technology is now being deployed closer to customers. The number of working channels provides an approximation of the number of transmission paths between customers and the telephone company offices serving those customers. Although the number of fiber channels nearly tripled during the first half of the 1990s, in 1997 copper wire still linked about 85% of customers to the first point of switching.

TABLE 17.1

**CENTRAL OFFICES AND ACCESS LINES BY TECHNOLOGY
(BELL OPERATING COMPANIES)**

YEAR-END	TOTAL OFFICES	ELECTRO-MECHANICAL OFFICES		ANALOG STORED PROGRAM CONTROL OFFICES		DIGITAL STORED PROGRAM CONTROL OFFICES	
1980	9,195	6,842	74.4 %	2,353	25.6 %	0	0.0 %
1981	9,198	6,647	72.3	2,527	27.5	24	0.3
1982	9,173	6,357	69.3	2,736	29.8	80	0.9
1983	9,156	6,075	66.3	2,910	31.8	171	1.9
1984	9,102	5,714	62.8	3,041	33.4	347	3.8
1985	9,124	5,244	57.5	3,020	33.1	860	9.4
1986	9,167	4,604	50.2	2,943	32.1	1,620	17.7
1987	9,190	3,819	41.6	2,833	30.8	2,538	27.6
1988	9,300	3,031	32.6	2,692	28.9	3,577	38.5
1989	9,338	2,416	25.9	2,519	27.0	4,403	47.2
1990	9,872	1,646	16.7	2,410	24.4	5,816	58.9
1991	9,957	1,148	11.5	2,167	21.8	6,642	66.7
1992	10,069	615	6.1	1,924	19.1	7,530	74.8
1993	10,088	296	2.9	1,554	15.4	8,239	81.7
1994	10,022	95	0.9	1,133	11.3	8,794	87.7
1995	10,050	60	0.6	976	9.7	9,014	89.7
1996	9,805	1	0.0	718	7.3	9,086	92.7
1997 *	9,966	0	0.0	548	5.5	9,418	94.5
ACCESS LINES SERVED BY TYPE OF OFFICE (THOUSANDS)							
YEAR-END	ALL OFFICES	ELECTRO-MECHANICAL OFFICES		ANALOG STORED PROGRAM CONTROL OFFICES		DIGITAL STORED PROGRAM CONTROL OFFICES	
1980	81,032	44,930	55.4 %	36,092	44.5 %	10	0.0 %
1981	82,581	40,425	49.0	42,099	51.0	57	0.1
1982	83,819	36,813	43.9	46,803	55.8	203	0.2
1983	86,186	32,652	37.9	52,919	61.4	615	0.7
1984	88,630	30,074	33.9	56,404	63.6	2,151	2.4
1985	91,455	24,778	27.1	58,532	64.0	8,145	8.9
1986	93,630	19,491	20.8	59,252	63.3	14,886	15.9
1987	96,593	14,205	14.7	59,442	61.5	22,946	23.8
1988	99,564	8,707	8.7	60,364	60.6	30,493	30.6
1989	102,684	5,646	5.5	58,846	57.3	38,192	37.2
1990	105,641	3,216	3.0	56,973	53.9	45,452	43.0
1991	107,387	1,876	1.7	53,450	49.8	52,061	48.5
1992	109,994	717	0.7	48,952	44.5	60,325	54.8
1993	113,369	264	0.2	41,912	37.0	71,193	62.8
1994	117,313	115	0.1	33,191	28.3	84,007	71.6
1995	122,229	63	0.1	29,031	23.8	93,135	76.2
1996	125,843	1	0.0	24,559	19.5	101,283	80.5
1997 *	131,721	0	0.0	21,218	16.1	110,503	83.9

SOURCE: 1980-89 REPORTED IN CC DOCKET 89-624.

1990-97 REPORTED IN ARMIS 43-07.

BECAUSE OF THE DIFFERING SOURCES, THE DATA FOR 1989 AND EARLIER YEARS MAY NOT BE ENTIRELY CONSISTENT WITH THE DATA FOR 1990 AND LATER YEARS.

* PRELIMINARY.

TABLE 17.2

**FEATURES AVAILABLE IN CENTRAL OFFICES
(BELL OPERATING COMPANIES)**

YEAR-END	TOTAL OFFICES	EQUAL ACCESS OFFICES		SIGNALING SYSTEM 7 OFFICES**		ISDN OFFICES	
1980	9,195	0	0.0 %	0	0.0 %	0	0.0 %
1981	9,198	0	0.0	0	0.0	0	0.0
1982	9,173	0	0.0	0	0.0	0	0.0
1983	9,156	0	0.0	0	0.0	0	0.0
1984	9,102	124	1.4	0	0.0	0	0.0
1985	9,124	1,891	20.7	0	0.0	0	0.0
1986	9,167	3,623	39.5	0	0.0	0	0.0
1987	9,190	4,823	52.5	29	0.3	4	0.0
1988	9,300	6,071	65.3	435	4.7	82	0.9
1989	9,338	6,788	72.7	931	10.0	179	1.9
1990	9,872	7,950	80.5	2,428	24.6	600	6.1
1991	9,957	8,601	86.4	3,670	36.9	920	9.2
1992	10,069	9,292	92.3	5,437	54.0	1,219	12.1
1993	10,089	9,697	96.1	6,688	66.3	1,874	18.6
1994	10,022	9,933	99.1	8,334	83.2	2,400	23.9
1995	10,050	9,977	99.3	8,977	89.3	2,868	28.5
1996	9,805	9,736	99.3	9,131	93.1	3,311	33.8
1997 *	9,966	9,945	99.8	9,688	97.2	3,902	39.2
EQUIPPED ACCESS LINES BY TYPE OF OFFICE (THOUSANDS)							
YEAR-END	ALL OFFICES	EQUAL ACCESS OFFICES		SIGNALING SYSTEM 7 OFFICES**		ISDN OFFICES***	
1980	81,032	0	0.0 %	0	0.0 %	0	0.0 %
1981	82,581	0	0.0	0	0.0	0	0.0
1982	83,819	0	0.0	0	0.0	0	0.0
1983	86,186	146	0.2	0	0.0	0	0.0
1984	88,630	9,350	10.5	0	0.0	0	0.0
1985	91,455	49,241	53.8	0	0.0	0	0.0
1986	93,630	70,543	75.3	0	0.0	0	0.0
1987	96,593	81,743	84.6	1,035	1.1	12	0.0
1988	99,564	91,809	92.2	10,325	10.4	47	0.0
1989	102,684	97,410	94.9	21,917	21.3	111	0.1
1990	105,641	102,429	97.0	40,026	37.9	13,970	13.2
1991	107,387	105,413	98.2	57,327	53.4	20,567	19.2
1992	109,994	109,006	99.1	77,102	70.1	28,375	25.8
1993	113,369	112,992	99.7	92,492	81.6	39,875	35.2
1994	117,313	117,266	100.0	109,465	93.3	56,546	48.2
1995	122,229	122,210	100.0	116,568	95.4	74,659	61.1
1996	125,843	125,843	100.0	122,343	97.2	85,434	67.9
1997 *	131,721	131,721	100.0	130,777	99.3	92,834	70.5

SOURCE: 1980-89 REPORTED IN CC DOCKET 89-624.

1990-97 REPORTED IN ARMIS 43-07.

BECAUSE OF THE DIFFERING SOURCES, THE DATA FOR 1989 AND EARLIER YEARS MAY NOT BE ENTIRELY CONSISTENT WITH THE DATA FOR 1990 AND LATER YEARS.

* PRELIMINARY.

** SIGNALING SYSTEM 7 SWITCH (SS7-317)

*** ISDN BASIC ACCESS LINE CAPACITY REPORTED FOR 1990-1997.

TABLE 17.3

**LOCAL TRANSMISSION TECHNOLOGY
(BELL OPERATING COMPANIES)**

MAJOR INTEROFFICE TRANSMISSION LINKS

YEAR-END	TOTAL	COPPER		FIBER		RADIO	
1990	2,895,117	1,092,041	37.7 %	1,737,984	60.0 %	65,092	2.2 %
1991	3,283,956	1,048,545	31.9	2,154,043	65.6	81,368	2.5
1992	3,570,147	869,052	24.3	2,610,185	73.1	90,910	2.5
1993	4,020,454	803,035	20.0	3,126,737	77.8	90,682	2.3
1994	4,497,524	569,428	12.7	3,846,394	85.5	81,702	1.8
1995	5,688,380	486,608	8.6	5,132,640	90.2	69,132	1.2
1996	7,725,804	435,278	5.6	7,245,369	93.8	45,157	0.6
1997 *	10,067,498	413,204	4.1	9,610,601	95.5	43,693	0.4

WORKING TELECOMMUNICATIONS CHANNELS

YEAR-END	TOTAL	COPPER		FIBER		OTHER	
1990	122,564,474 **	106,373,173	86.8 %	3,545,583	2.9 %	0	0.0 %
1991	118,654,347	114,046,814	96.1	4,605,184	3.9	2,349	0.0
1992	120,847,400	114,609,440	94.8	6,237,727	5.2	233	0.0
1993	124,191,040	115,495,808	93.0	8,693,817	7.0	1,415	0.0
1994	130,191,520	118,436,712	91.0	11,754,500	9.0	308	0.0
1995	136,230,816	122,975,272	90.3	13,255,293	9.7	251	0.0
1996	142,823,744	125,595,232	87.9	17,227,824	12.1	672	0.0
1997 *	149,418,649	128,436,312	86.0	20,982,080	14.0	257	0.0

SOURCE: ARMIS 43-07 REPORT.

* PRELIMINARY

** INCLUDES SOME OTHER CHANNELS.

TELECOMMUNICATIONS INDUSTRY REVENUES:

Since 1993, all carriers with interstate revenues have been required to file an annual Telecommunications Relay Service (TRS) Fund Worksheet. Because revenues derived from providing access to the interstate network are considered to be interstate, virtually all carriers are required to file information. About 3,500 carriers filed these worksheets in 1997 and reported \$222 billion of revenue for 1996. Table 18.1 shows these revenues for the ten revenue categories provided in the TRS worksheets. Carriers billed \$87 billion for local services, \$36 billion for access services, and \$100 billion for toll services in 1996. A large share of access revenues represents payments from toll carriers to traditional local exchange carriers for access. The number of carriers paying into the TRS fund by type of carrier are shown in Table 18.2 and their revenues are shown in Table 18.3.

The publication, Carrier Locator: Interstate Service Providers, lists 3,832 carriers that filed a TRS worksheet or a Universal Service Fund worksheet in 1997. It also contains an address and contact telephone number for each carrier.

Table 18.4 provides estimates of industry telephone revenue by state for 1995 and 1996. Nationwide telephone revenue from TRS is allocated to each state using data from the Statistics of Communication Common Carriers and from the Statistical Abstract of the United States.

TABLE 18.1
TELECOMMUNICATIONS REVENUE REPORTED BY TYPE OF SERVICE
(Amounts shown in millions)

	1992	1993	1994	1995	1996	Percent Change From 1992
Local Service						
Local Exchange	\$39,235	\$40,176	\$42,245	\$45,194	\$48,717	24%
Local Private Line	1,049	1,088	1,138	1,226	1,616	54%
Cellular, PCS, Paging & Other Mobile	7,285	10,237	14,293	18,759	26,049	258%
Other Local	<u>7,687</u>	<u>8,002</u>	<u>8,302</u>	<u>10,428</u>	<u>10,543</u>	37%
Total Local Service	55,256	59,503	65,977	75,607	86,924	57%
Interstate & Intrastate Access Service	29,353	30,832	32,759	33,911	35,641	21%
Long Distance Service						
Operator (including Pay Telephone & Card)	9,465	10,772	10,539	11,170	10,975	16%
Non-Operator Switched Toll	54,300	58,294	60,819	64,431	71,467	32%
Long Distance Private Line	7,783	8,067	9,043	9,719	10,665	37%
Other Long Distance	<u>4,196</u>	<u>5,392</u>	<u>4,078</u>	<u>4,309</u>	<u>6,583</u>	57%
Total Long Distance	75,744	82,525	84,478	89,629	99,691	32%
Total Reported Revenue	160,353	172,860	183,214	199,147	222,256	39%
Percentage of Revenue Reported as Interstate						
Local Service						
Local Exchange	0.1%	0.1%	0.0%	0.1%	0.1%	
Local Private Line	0.1%	0.1%	0.2%	0.4%	6.9%	
Cellular, PCS, Paging & Other Mobile	6.2%	6.0%	5.8%	5.8%	5.3%	
Other Local	14.9%	14.0%	13.9%	11.2%	11.8%	
Total Local Service	2.9%	3.0%	3.0%	3.0%	3.2%	
Interstate & Intrastate Access Service	72.3%	72.9%	73.1%	73.2%	73.3%	
Long Distance Service						
Operator (including Pay Telephone & Card)	76.2%	65.5%	62.3%	61.6%	58.8%	
Non-Operator Switched Toll	59.1%	59.9%	63.2%	64.8%	64.8%	
Long Distance Private Line	70.2%	71.4%	73.0%	73.9%	73.1%	
Other Long Distance	82.0%	73.2%	74.6%	75.8%	75.2%	
Total Long Distance	63.6%	62.6%	64.7%	65.9%	65.7%	
Total Reported Revenue	44.3%	43.9%	44.0%	43.3%	42.5%	

Source: Industry Analysis Division, *Telecommunications Industry Revenue: TRS Fund Worksheet Data*.

TABLE 18.2

**NUMBER OF CARRIERS PAYING INTO THE TELECOMMUNICATIONS RELAY
SERVICE FUND BY TYPE OF CARRIER**

	1992	1993	1994	1995	1996
Competitive Access Providers (CAPs) & Competitive LECs (CLECs)		20	30	57	109
Cellular Service Carriers & Personal Communications Service (PCS)		798	790	792	804
Interexchange Carriers (IXCs)		83	97	130	143
Local Exchange Carriers (LECs)		1,281	1,347	1,347	1,371
Paging and Other Mobile Carriers		126	117	138	172
Operator Service Providers (OSPs)		35	29	25	27
Other Toll Carriers		32	34	30	38
Pay Telephone Providers		163	197	271	441
Pre paid Calling Card Providers				8	15
Toll Resellers		171	206	260	339
Total	2,558	2,709	2,847	3,058	3,459

Source: Industry Analysis Division, *Telecommunications Industry Revenue: TRS Fund Worksheet Data*.

TAI**TABLE 18.3**

Grc
(Mil

**Gross Revenue Reported by Type of Carrier
(Millions)**

	1992	1993	1994	1995	1996
Competitive Access Providers (CAPs) & Competitive LECs (CLECs)	\$69	\$191	\$281	\$623	\$1,011
Cellular Service Carriers & Personal Communications Service (PCS)	6,718	9,215	13,259	17,208	23,778
Interexchange Carriers (IXCs)	57,341	61,118	66,381	70,938	79,057
Local Exchange Carriers (LECs)	91,584	95,228	98,431	102,820	107,905
Paging and Other Mobile Carriers	670	964	938	1,419	2,121
Operator Service Providers (OSPs)	558	695	536	500	461
Other Toll Carriers	2,186	711	709	773	577
Pay Telephone Providers	183	175	300	349	357
Prepaid Calling Card Providers				16	238
Toll Resellers	1,293	1,869	2,840	4,220	6,564
Total of detail data <u>1/</u>	\$160,601	\$170,166	\$183,675	\$198,867	\$222,069
Total all carriers <u>2/</u>	\$160,353	\$172,860	\$183,214	\$199,147	\$222,256
AT&T, MCI, Sprint & WorldCom (Toll only)	55,104	60,694	63,374	67,539	73,347
Regional Bell Operating Companies (RBOCs)	66,887	70,428	70,856	75,038	79,675

Source: Industry Analysis Division, *Telecommunications Industry Revenue: TRS Fund Worksheet Data*.

1/ Sum of detail revenue as originally reported. This total excludes some amounts withheld to preserve confidentiality.

2/ These totals include all reported revenue and reflect late filings and revisions.

TABLE 18.4
INDUSTRY TELEPHONE REVENUE BY STATE FOR 1995 AND 1996

	1995		1996		PERCENT CHANGE FROM 1995 TO 1996
	REVENUE (MILLIONS)	PERCENT OF TOTAL	REVENUE (MILLIONS)	PERCENT OF TOTAL	
ALABAMA	\$2,800	1.41 %	\$3,097	1.39 %	10.6 %
ALASKA	484	0.24	541	0.24	11.8
ARIZONA	2,948	1.48	3,380	1.52	14.6
ARKANSAS	1,567	0.79	1,754	0.79	12.0
CALIFORNIA	23,093	11.60	25,961	11.68	12.4
COLORADO	3,256	1.64	3,683	1.66	13.1
CONNECTICUT	2,878	1.45	3,075	1.38	6.8
DELAWARE	508	0.26	588	0.26	15.6
DIST. OF COLUMBIA	935	0.47	1,013	0.46	8.3
FLORIDA	11,994	6.02	13,488	6.07	12.5
GEORGIA	5,869	2.95	6,651	2.99	13.3
HAWAII	815	0.41	887	0.40	8.9
IDAHO	811	0.41	932	0.42	14.9
ILLINOIS	8,272	4.15	9,343	4.20	12.9
INDIANA	3,948	1.98	4,359	1.96	10.4
IOWA	1,939	0.97	2,104	0.95	8.5
KANSAS	1,879	0.94	2,083	0.94	10.9
KENTUCKY	2,761	1.39	3,044	1.37	10.3
LOUISIANA	2,842	1.43	3,108	1.40	9.4
MAINE	896	0.45	1,009	0.45	12.7
MARYLAND	3,918	1.97	4,422	1.99	12.9
MASSACHUSETTS	5,190	2.61	5,711	2.57	10.0
MICHIGAN	6,652	3.34	7,511	3.38	12.9
MINNESOTA	3,180	1.60	3,592	1.62	13.0
MISSISSIPPI	1,665	0.84	1,827	0.82	9.7
MISSOURI	3,838	1.93	4,246	1.91	10.6
MONTANA	654	0.33	724	0.33	10.8
NEBRASKA	1,353	0.68	1,495	0.67	10.5
NEVADA	1,157	0.58	1,370	0.62	18.5
NEW HAMPSHIRE	1,019	0.51	1,158	0.52	13.7
NEW JERSEY	7,249	3.64	8,125	3.66	12.1
NEW MEXICO	1,167	0.59	1,319	0.59	13.0
NEW YORK	15,780	7.92	16,938	7.62	7.3
NORTH CAROLINA	5,772	2.90	6,382	2.87	10.6
NORTH DAKOTA	509	0.26	633	0.28	24.5
OHIO	8,480	4.26	9,367	4.21	10.5
OKLAHOMA	2,063	1.04	2,271	1.02	10.1
OREGON	2,308	1.16	2,588	1.16	12.1
PENNSYLVANIA	8,287	4.16	9,258	4.17	11.7
RHODE ISLAND	712	0.36	796	0.36	11.7
SOUTH CAROLINA	2,768	1.39	2,980	1.34	7.7
SOUTH DAKOTA	499	0.25	599	0.27	20.1
TENNESSEE	3,625	1.82	4,072	1.83	12.3
TEXAS	13,352	6.70	15,117	6.80	13.2
UTAH	1,152	0.58	1,325	0.60	15.1
VERMONT	483	0.24	572	0.26	18.6
VIRGINIA	5,238	2.63	5,872	2.64	12.1
WASHINGTON	4,208	2.11	4,679	2.11	11.2
WEST VIRGINIA	1,194	0.60	1,303	0.59	9.1
WISCONSIN	3,392	1.70	3,783	1.70	11.5
WYOMING	375	0.19	418	0.19	11.4
UNITED STATES	197,734	99.29	220,554	99.23	11.5
GUAM	N.A.	N.A.	89	0.04	N.A.
NORTHERN MARIANA IS.	16	0.01	19	0.01	22.4
PUERTO RICO	1,321	0.66	1,495	0.67	13.2
VIRGIN ISLANDS	76	0.04	97	0.04	27.7
GRAND TOTAL	\$199,147	100.00 %	\$222,256	100.00 %	11.6 %

SOURCE: TRS FUND WORKSHEETS AND STAFF ESTIMATES.

ESTIMATES FOR 1995 ARE REVISED.

FIGURES MAY NOT ADD UP DUE TO ROUNDING.

TELEPHONE LINES:

Within the telephone industry there are several alternative, but closely related, definitions of telephone lines or loops. While these differences often make it difficult to reconcile data from different statistical series, they are not usually large enough to affect comparisons among companies or trends over time. Since 1970, over 90% of households and virtually all businesses have subscribed to telephone service. Therefore, line growth over time, averaging about 3% per year, has historically reflected growth in the population and the economy. In recent years, the growth in lines has increased as households have added additional lines.

Table 19.1 shows the nation's total number of telephone lines using three alternative measures. One measure is the number of local loops, which is a way of counting lines that is used to determine the amount of Universal Service Fund payments to local exchange carriers. A second measure is the number of presubscribed lines, which were used until 1998 to determine the amount of payments by the interexchange carriers to support the Universal Service Fund and the Lifeline and Link-Up programs. The third measure, access lines, is published by the United States Telephone Association.

Table 19.2 shows the number of local exchange carriers and presubscribed access lines in each state, and shows breakdowns for equal access and non-equal access lines.

Table 19.3 compares the number of residential local loops with the number of households with telephone service. The difference between these series is an approximate measure of the number of additional residential access lines. Table 19.3 shows that the percentage of additional lines for households with telephone service has increased dramatically, from about 3% in 1988 to about 17% in 1996.

Table 19.1

Total U.S. Telephone Lines *

Year	Presubscribed Lines	Annual Growth (%)	Local Loops	Annual Growth (%)	Access Lines	Annual Growth (%)
1979					101,478,000	
1980			102,216,367		104,692,000	3.2 %
1981			105,559,222	3.3 %	107,416,000	2.6
1982			107,519,214	1.9	108,593,000	1.1
1983			110,612,689	2.9	111,373,000	2.6
1984			112,550,739	1.8	114,474,000	2.8
1985			115,985,813	3.1	118,275,000	3.3
1986			118,289,121	2.0	122,202,600	3.3
1987	121,466,500		122,789,249	3.8	126,725,000	3.7
1988	124,360,829	2.4 %	127,086,765	3.5	130,000,000	2.6
1989	128,482,479	3.3	131,504,568	3.5	134,009,489	3.1
1990	132,408,608	3.1	136,114,201	3.5	137,075,520	2.3
1991	135,286,582	2.2	139,412,884	2.4	140,196,551	2.3
1992	138,725,040	2.5	143,341,581	2.8	144,056,712	2.8
1993	142,809,280	2.9	148,106,159	3.3	149,084,378	3.5
1994	148,479,328	4.0	153,447,946	3.6	156,769,460	5.2
1995	152,601,177	2.8	159,735,212	4.1	164,624,372	5.0
1996	158,672,243	4.0	166,320,559	4.1	170,568,176	3.6

Source: Presubscribed Lines: National Exchange Carrier Association.
Local Loops: National Exchange Carrier Association.
Access Lines: United States Telephone Association.

* Year-end data.

TABLE 19.2
TELEPHONE LINES BY STATE AS OF DECEMBER 31, 1996

STATE NAME	NUMBER OF TELEPHONE COMPANIES	BELL COMPANY LINES			OTHER COMPANY LINES				
		EQUAL ACCESS	NON-EQUAL ACCESS	% EQUAL ACCESS	EQUAL ACCESS	NON-EQUAL ACCESS	% EQUAL ACCESS	TOTAL LINES	% EQUAL ACCESS
ALABAMA	30	1,804,922	0	100.00	416,009	12,431	97.10	2,233,362	99.44
ALASKA	25	0	0	N.A.	308,979	46,206	86.99	355,185	86.99
ARIZONA	15	2,255,788	711	99.97	155,215	2,898	98.17	2,414,612	99.85
ARKANSAS	28	887,446	0	100.00	381,685	19,326	95.18	1,288,457	98.50
CALIFORNIA	22	15,825,276	0	100.00	3,948,898	31,136	99.22	19,805,310	99.84
COLORADO	27	2,276,307	1,831	99.92	92,300	10,744	89.57	2,381,182	99.47
CONNECTICUT	2	0	0	N.A.	2,035,573	0	100.00	2,035,573	100.00
DELAWARE	1	466,474	0	100.00	0	0	N.A.	466,474	100.00
DIST. OF COLUMBIA	1	771,630	0	100.00	0	0	N.A.	771,630	100.00
FLORIDA	13	5,663,040	0	100.00	3,865,704	42,758	98.91	9,571,502	99.55
GEORGIA	36	3,572,631	0	100.00	671,366	31,411	95.53	4,275,408	99.27
HAWAII	1	0	0	N.A.	586,974	28,314	95.40	615,288	95.40
IDAHO	21	449,625	0	100.00	160,233	2,897	98.22	612,755	99.53
ILLINOIS	56	6,233,999	0	100.00	1,153,220	55,376	95.42	7,442,595	99.26
INDIANA	42	1,953,053	0	100.00	1,145,476	23,638	97.98	3,122,167	99.24
IOWA	153	989,362	0	100.00	495,012	10,894	97.85	1,495,268	99.27
KANSAS	39	1,244,898	0	100.00	199,374	42,034	82.59	1,486,306	97.17
KENTUCKY	19	1,113,544	0	100.00	776,373	7,665	99.02	1,897,582	99.60
LOUISIANA	20	2,102,325	0	100.00	151,262	12,216	92.53	2,265,803	99.46
MAINE	19	633,594	0	100.00	116,874	4,410	96.36	754,878	99.42
MARYLAND	2	3,046,238	0	100.00	5,829	0	100.00	3,052,067	100.00
MASSACHUSETTS	3	4,148,019	0	100.00	3,795	0	100.00	4,151,814	100.00
MICHIGAN	38	4,843,416	0	100.00	809,673	49,964	94.19	5,703,053	99.12
MINNESOTA	89	2,055,017	0	100.00	659,497	15,072	97.77	2,729,586	99.45
MISSISSIPPI	19	1,166,783	0	100.00	52,683	25,281	67.57	1,244,747	97.97
MISSOURI	44	2,325,764	0	100.00	674,867	63,551	91.39	3,064,182	97.93
MONTANA	18	334,537	0	100.00	135,820	11,341	92.29	481,698	97.65
NEBRASKA	42	501,392	0	100.00	404,197	22,334	94.76	927,923	97.59
NEVADA	14	294,577	0	100.00	776,083	3,444	99.56	1,074,104	99.68
NEW HAMPSHIRE	12	707,034	0	100.00	42,870	2,859	93.75	752,763	99.62
NEW JERSEY	3	5,587,098	0	100.00	189,400	0	100.00	5,776,498	100.00
NEW MEXICO	15	693,849	0	100.00	108,617	11,700	90.28	814,166	98.56
NEW YORK	44	10,373,195	0	100.00	1,180,966	8,218	99.31	11,562,379	99.93
NORTH CAROLINA	26	2,066,889	0	100.00	2,086,598	13,129	99.37	4,166,616	99.68
NORTH DAKOTA	24	207,695	0	100.00	123,591	22,958	84.33	354,244	93.52
OHIO	42	3,733,502	0	100.00	2,413,246	80,892	96.76	6,227,640	98.70
OKLAHOMA	39	1,503,575	7,320	99.52	298,718	13,212	95.76	1,822,825	98.87
OREGON	33	1,230,646	0	100.00	611,272	5,396	99.12	1,847,314	99.71
PENNSYLVANIA	37	5,500,537	0	100.00	1,594,339	24,793	98.47	7,119,669	99.65
RHODE ISLAND	1	602,318	0	100.00	0	0	N.A.	602,318	100.00
SOUTH CAROLINA	27	1,309,243	0	100.00	651,840	922	99.86	1,962,005	99.95
SOUTH DAKOTA	32	257,672	0	100.00	122,661	4,748	96.27	385,081	98.77
TENNESSEE	25	2,465,023	0	100.00	570,920	35,869	94.09	3,071,812	98.83
TEXAS	57	8,376,840	0	100.00	2,242,582	59,016	97.44	10,678,438	99.45
UTAH	13	941,891	0	100.00	35,588	7,115	83.34	984,594	99.28
VERMONT	10	307,533	0	100.00	52,649	5,290	90.87	365,472	98.55
VIRGINIA	21	2,839,412	0	100.00	921,353	4,608	99.50	3,765,373	99.88
WASHINGTON	22	2,258,674	0	100.00	1,002,466	9,059	99.10	3,270,199	99.72
WEST VIRGINIA	10	703,559	0	100.00	140,265	2,516	98.24	846,340	99.70
WISCONSIN	89	2,047,863	0	100.00	1,004,961	4,945	99.51	3,057,769	99.84
WYOMING	10	226,095	0	100.00	34,883	13,331	72.35	274,309	95.14
UNITED STATES	1,431 *	120,899,800	9,862	99.99	35,612,756	905,917	97.52	157,428,335	99.42
NORTHERN MARIANA	1	0	0	N.A.	20,976	0	100.00	20,976	100.00
PUERTO RICO	2	0	0	N.A.	1,166,721	0	100.00	1,166,721	100.00
VIRGIN ISLANDS	1	0	0	N.A.	56,211	0	100.00	56,211	100.00
GRAND TOTAL	1,435 *	120,899,800	9,862	99.99	36,856,664	905,917	97.60	158,672,243	99.42

Source: National Exchange Carrier Association PSL Database.

* This total number of operating companies overstates the actual number of operating companies because many operating companies serve more than one state. There are about 1,500 separate operating companies.

TABLE 19.3

**ADDITIONAL RESIDENTIAL LINES
FOR HOUSEHOLDS WITH TELEPHONE SERVICE
(End-of-year data in millions)**

Year	Loops 1/			Households with Telephone Service 2/	Additional Residential Lines	Percentage of Additional Lines for Households with Telephones
	Residential	Non- Residential	Total Loops			
1988	87.7	38.5	126.2	85.4	2.3	2.7 %
1989	90.0	40.6	130.6	87.4	2.6	3.0
1990	92.2	42.9	135.1	88.4	3.9	4.4
1991	95.9	42.5	138.4	89.4	6.5	7.3
1992	99.3	43.0	142.3	91.0	8.3	9.1
1993	101.8	45.2	147.0	93.0	8.8	9.4
1994	105.1	47.2	152.3	93.7	11.4	12.2
1995	108.1	50.4	158.5	94.2	13.9	14.8
1996	110.8	54.2	165.1	95.1	15.7	16.5

Source: FCC staff estimates.

- 1/ Total loops are from the Universal Service Fund subscriber line counts provided by the National Exchange Carrier Association. The Northern Mariana Islands, Puerto Rico, and the U.S. Virgin Islands totals have been removed. Total loops have been divided between residential and non-residential using the ratio of residential to non-residential access lines reported in *Statistics of Communications Common Carriers*. Those totals also exclude Puerto Rico, but cover only the carriers that file ARMIS reports (of which there are none for the Northern Mariana Islands and the U.S. Virgin Islands).
- 2/ Current Population Survey (U.S. Department of Commerce, Bureau of the Census).

TELEPHONE NUMBERS:

In 1994, many area codes were nearing exhaustion as demand for telephone numbers continued to rise. Adding new area codes was difficult because some older telephone equipment was designed to recognize only area codes with a middle digit of 0 or 1, and the supply of those area codes was dwindling. On January 1, 1995, the restriction on the middle digit was removed, and 640 new area codes were made available. During 1995, fourteen new area codes were assigned -- the largest single-year expansion of area codes in decades. Twenty new area codes were added in 1996, forty-four were added in 1997. Currently, twenty codes are to be added in 1998. The changes in area codes from 1984 to 1999 are shown in Table 20.1. Area codes are assigned by the North American Numbering Plan Administration (NANPA), which is part of Lockheed Martin IMS.

On May 1, 1993, procedures for routing 800 calls were changed and 800 numbers were made "portable." The new system enables customers to change service providers while still retaining the same 800 number. There has been tremendous growth in the 800 market. The growth of 800 telephone numbers is shown in Table 20.2. In March 1996, a second toll-free calling code -- 888 -- was placed in service. The 888 code assignments are shown in Table 20.3. The third toll-free calling code -- 877 -- went into effect April 4, 1998. The 877 code assignments are shown in Table 20.4. Database Service Management, Inc., maintains the database on toll free numbers.

TABLE 20.1**AREA CODES ASSIGNMENTS
(1984-1999)**

LOCATION	DATE	PREVIOUS CODE	ADDED CODE
CALIFORNIA	1/84	213	818
NEW YORK	9/84	212	718
COLORADO	3/88	303	719
FLORIDA	4/88	305	407
MASSACHUSETTS	7/88	617	508
ILLINOIS	11/89	312	708
NEW JERSEY	11/90	201	908
TEXAS	11/90	214	903
CALIFORNIA	9/91	415	510
MARYLAND	10/91	301	410
CALIFORNIA	11/91	213	310
NEW YORK	1/92	212	917
NEW YORK	1/92	718	917
GEORGIA	5/92	404	706
NEW YORK	7/92	212	718
TEXAS	11/92	512	210
CALIFORNIA	11/92	714	909
ONTARIO	10/93	416	905
NORTH CAROLINA	11/93	919	910
MICHIGAN	12/93	313	810
PENNSYLVANIA	1/94	215	610
ALABAMA	1/95	205	334
WASHINGTON	1/95	206	360
ARIZONA	3/95	602	520
COLORADO	4/95	303	970
FLORIDA (TAMPA)	5/95	813	941
VIRGINIA	7/95	703	540
GEORGIA (ATLANTA)	8/95	404	770
CONNECTICUT	8/95	203	860
FLORIDA (MIAMI)	9/95	305	954
TENNESSEE	9/95	615	423
BERMUDA	10/95	809	441
OREGON	11/95	503	541
SOUTH CAROLINA	12/95	803	864
FLORIDA (NORTH)	12/95	904	352
MISSOURI	1/96	314	573
ILLINOIS (CHICAGO)	1/96	708	847
PUERTO RICO	3/96	809	787
OHIO	3/96	216	330
MINNESOTA	3/96	612	320
ANTIGUA	4/96	809	268
FLORIDA (SOUTHEAST)	5/96	407	561
BARBADOS	7/96	809	246
ST. LUCIA	7/96	809	758
VIRGINIA	7/96	804	757

TABLE 20.1

**AREA CODES ASSIGNMENTS - CONTINUED
(1984-1999)**

LOCATION	DATE	PREVIOUS CODE	ADDED CODE
MONTSERRAT	7/96	809	664
ILLINOIS (CHICAGO)	8/96	708	630
CAYMAN ISLANDS	9/96	809	345
TEXAS (DALLAS)	9/96	214	972
OHIO	9/96	513	937
BAHAMAS	10/96	809	242
ST. KITTS & NEVIS	10/96	809	869
ILLINOIS (CHICAGO)	10/96	312	773
BRITISH COLUMBIA	10/96	604	250
TEXAS (HOUSTON)	11/96	713	281
CALIFORNIA (SOUTHERN)	1/97	310	562
INDIANA	2/97	317	765
CALIFORNIA	3/97	619	760
ANGUILLA	3/97	809	264
ARKANSAS	4/97	501	870
WASHINGTON ST.	4/97	206	253
WASHINGTON ST.	4/97	206	425
JAMAICA	5/97	809	876
MICHIGAN	5/97	810	248
TEXAS	5/97	817	254
TEXAS	5/97	817	940
TURKS & CAICOS	6/97	809	649
TRINIDAD & TOBAGO	6/97	809	868
MARYLAND	6/97	301	240
MARYLAND	6/97	410	443
NEW JERSEY	6/97	201	973
NEW JERSEY	6/97	908	732
U.S. VIRGIN ISLANDS	6/97	809	340
CALIFORNIA	6/97	818	626
FLORIDA	6/97	904	850
GUAM	7/97	NA	671
COMMONWEALTH OF THE NORTHERN MARIANA IS.	7/97	NA	670
TEXAS	7/97	210	830
TEXAS	7/97	210	956
KANSAS	7/97	913	785
WISCONSIN	7/97	414	920
CALIFORNIA	8/97	415	650
OHIO	8/97	216	440
MASSACHUSETTS	9/97	617	781
MASSACHUSETTS	9/97	508	978
TENNESSEE	9/97	615	931
MISSISSIPPI	9/97	601	228
UTAH	9/97	801	435
DOMINICA	10/97	809	767
BRITISH VIRGIN ISLANDS	10/97	809	284

TABLE 20.1
AREA CODES ASSIGNMENTS - CONTINUED
(1984-1999)

LOCATION	DATE	PREVIOUS CODE	ADDED CODE
MISSOURI	10/97	816	660
YUKON & NW TERR.	10/97	403	867
YUKON & NW TERR.	10/97	819	867
GRENADA	10/97	809	473
CALIFORNIA	11/97	916	530
OKLAHOMA	11/97	405	580
OHIO	12/97	614	740
MICHIGAN	12/97	313	734
NORTH CAROLINA	12/97	910	336
GEORGIA (ATLANTA)	1/98	770	678
PENNSYLVANIA	2/98	412	724
COLORADO	2/98	303	720
FLORIDA	3/98	305	786
CALIFORNIA	3/98	510	925
SOUTH CAROLINA	3/98	803	843
NORTH CAROLINA	3/98	704	828
NORTH CAROLINA	3/98	919	252
ALABAMA	3/98	205	256
CALIFORNIA	4/98	714	949
ST. VINCENT & GRENADINES	6/98	809	784
QUEBEC	6/98	514	450
CALIFORNIA (LOS ANGELES)	6/98	213	323
FLORIDA	7/98	813	727
CALIFORNIA	7/98	408	831
MINNESOTA	7/98	612	651
CALIFORNIA	7/98	310	424
LOUISIANA	8/98	504	225
CALIFORNIA	11/98	209	559
NEVADA	12/98	702	775
ALBERTA	1/99	403	780
CALIFORNIA	2/99	805	661

SOURCE: NORTH AMERICAN NUMBERING PLAN ADMINISTRATION.

TABLE 20.2

TELEPHONE NUMBERS ASSIGNED FOR 800 SERVICE

YEAR MONTH	WORKING 800 NUMBERS	MISC* 800 NUMBERS	TOTAL 800 NUMBERS ASSIGNED	SPARE 800 NUMBERS STILL AVAILABLE
1993 APRIL	2,448,985	642,725	3,091,710	4,618,290
MAY	2,511,933	708,192	3,220,125	4,489,875
JUNE	2,589,123	722,006	3,311,129	4,398,871
JULY	2,675,483	705,416	3,380,899	4,329,101
AUGUST	2,738,259	701,009	3,439,268	4,270,732
SEPTEMBER	2,818,262	639,547	3,457,809	4,252,191
OCTOBER	2,891,994	660,544	3,552,538	4,157,462
NOVEMBER	3,083,250	728,514	3,811,764	3,898,236
DECEMBER	3,155,955	731,438	3,887,393	3,822,607
1994 JANUARY	3,257,540	580,216	3,837,756	3,872,244
FEBRUARY	3,381,646	731,005	4,112,651	3,597,349
MARCH	3,516,620	743,813	4,260,433	3,449,567
APRIL	3,659,129	699,212	4,358,341	3,351,659
MAY	3,793,865	738,767	4,532,632	3,177,368
JUNE	3,933,037	792,698	4,725,735	2,984,265
JULY	4,099,174	699,803	4,798,977	2,911,023
AUGUST	4,312,486	807,881	5,120,367	2,589,633
SEPTEMBER	4,506,014	841,381	5,347,395	2,362,605
OCTOBER	4,611,014	871,684	5,482,698	2,227,302
NOVEMBER	4,817,854	875,416	5,693,270	2,016,730
DECEMBER	4,948,605	763,235	5,711,840	1,998,160
1995 JANUARY	5,096,646	807,294	5,903,940	1,806,060
FEBRUARY	5,278,800	811,221	6,090,021	1,619,979
MARCH	5,528,723	793,771	6,322,494	1,387,506
APRIL	5,741,780	797,902	6,539,682	1,170,318
MAY	5,980,848	843,093	6,823,941	886,059
JUNE	6,340,534	481,633	6,822,167	887,833
JULY	6,402,785	443,717	6,846,502	863,498
AUGUST	6,428,120	442,270	6,870,390	839,610
SEPTEMBER	6,503,018	437,215	6,940,233	769,767
OCTOBER	6,583,344	396,605	6,979,949	730,051
NOVEMBER	6,647,880	310,043	6,957,923	752,077
DECEMBER	6,700,576	286,487	6,987,063	722,937
1996 JANUARY	6,766,607	297,001	7,063,608	646,392
FEBRUARY	6,861,093	335,557	7,196,650	513,350
MARCH	6,907,098	293,244	7,200,342	509,658
APRIL	6,934,085	280,927	7,215,012	494,988
MAY	6,943,620	333,140	7,276,760	433,240
JUNE	6,986,821	324,899	7,311,720	398,280
JULY	7,022,309	339,900	7,362,209	347,791
AUGUST	7,074,772	311,273	7,386,045	323,955
SEPTEMBER	7,119,167	310,562	7,429,729	280,271
OCTOBER	7,185,135	325,088	7,510,223	199,777
NOVEMBER	7,242,377	337,502	7,579,879	130,121
DECEMBER	7,272,819	343,905	7,616,724	93,276

TABLE 20.2

TELEPHONE NUMBERS ASSIGNED FOR 800 SERVICE- CONTINUED

YEAR	MONTH	WORKING 800 NUMBERS	MISC* 800 NUMBERS	TOTAL 800 NUMBERS ASSIGNED	SPARE 800 NUMBERS STILL AVAILABLE
1997	JANUARY	7,333,632	323,804	7,657,436	52,564
	FEBRUARY	7,388,696	318,571	7,707,267	2,733
	MARCH	7,402,769	305,362	7,708,131	1,869
	APRIL	7,411,118	296,925	7,708,043	1,957
	MAY	7,411,291	294,320	7,705,611	4,389
	JUNE	7,415,591	293,802	7,709,393	607
	JULY	7,421,288	283,794	7,705,082	4,918
	AUGUST	7,430,733	276,024	7,706,757	3,243
	SEPTEMBER	7,427,717	280,668	7,708,385	1,615
	OCTOBER	7,433,483	276,490	7,709,973	27
	NOVEMBER	7,423,662	276,576	7,700,238	9,762
	DECEMBER	7,429,160	267,429	7,696,589	13,411
1998	JANUARY	7,431,789	264,143	7,695,932	14,068
	FEBRUARY	7,445,338	257,493	7,702,831	7,169
	MARCH	7,455,240	249,964	7,705,204	4,796
	APRIL	7,464,692	232,462	7,697,154	12,846
	MAY	7,476,270	228,409	7,704,679	5,321
	JUNE	7,480,468	227,041	7,707,509	2,491

* MISCELLANEOUS NUMBERS INCLUDE THOSE IN THE 800 SERVICE MANAGEMENT SYSTEM MAINTAINED BY DATA SERVICE MANAGEMENT, INC., AND CATEGORIZED AS RESERVED, ASSIGNED BUT NOT YET ACTIVATED, RECENTLY DISCONNECTED, OR SUSPENDED.

TABLE 20.3
TELEPHONE NUMBERS ASSIGNED FOR 888 SERVICE

YEAR MONTH	WORKING 888 NUMBERS	MISC* 888 NUMBERS	TOTAL 888 NUMBERS ASSIGNED	SPARE 888 NUMBERS STILL AVAILABLE
1996 FEBRUARY	67,399	560,598	627,997	7,352,003
MARCH	267,874	568,574	836,448	7,143,552
APRIL	442,005	565,402	1,007,407	6,972,593
MAY	707,374	542,428	1,249,802	6,730,198
JUNE	922,849	544,079	1,466,928	6,513,072
JULY	1,157,770	549,845	1,707,615	6,272,385
AUGUST	1,437,660	576,399	2,014,059	5,965,941
SEPTEMBER	1,641,519	590,345	2,231,864	5,748,136
OCTOBER	1,886,663	629,365	2,516,028	5,463,972
NOVEMBER	2,074,600	622,375	2,696,975	5,283,025
DECEMBER	2,255,163	601,766	2,856,929	5,123,071
1997 JANUARY	2,457,250	591,533	3,048,783	4,931,217
FEBRUARY	2,654,984	629,997	3,284,981	4,695,019
MARCH	2,857,608	661,164	3,518,772	4,461,228
APRIL	3,097,015	646,709	3,743,724	4,236,276
MAY	3,399,856	657,615	4,057,471	3,922,529
JUNE	3,660,984	681,981	4,342,965	3,637,035
JULY	3,990,769	696,331	4,687,100	3,292,900
AUGUST	4,345,910	742,755	5,088,665	2,891,335
SEPTEMBER	4,776,688	774,431	5,551,119	2,428,881
OCTOBER	5,139,455	726,515	5,865,970	2,114,030
NOVEMBER	5,353,989	699,223	6,053,212	1,926,788
DECEMBER	5,551,554	729,020	6,280,574	1,699,426
1998 JANUARY	5,760,023	719,289	6,479,312	1,500,688
FEBRUARY	5,968,391	723,679	6,692,070	1,287,930
MARCH	6,167,479	728,415	6,895,894	1,084,106
APRIL	6,373,603	690,041	7,063,644	916,356
MAY	6,493,156	672,776	7,165,932	814,068
JUNE	6,591,764	665,496	7,257,260	722,740

* MISCELLANEOUS NUMBERS INCLUDE THOSE IN THE 888 SERVICE MANAGEMENT SYSTEM MAINTAINED BY DATA SERVICE MANAGEMENT INC., AND CATEGORIZED AS RESERVED, ASSIGNED BUT NOT YET ACTIVATED, RECENTLY DISCONNECTED, OR SUSPENDED.

TABLE 20.4
TELEPHONE NUMBERS ASSIGNED FOR 877 SERVICE

YEAR MONTH	WORKING 877 NUMBERS	MISC* 877 NUMBERS	TOTAL 877 NUMBERS ASSIGNED	SPARE 877 NUMBERS STILL AVAILABLE
1998 APRIL	168,300	276,169	444,469	7,535,531
MAY	354,303	256,712	611,015	7,368,985
JUNE	552,037	209,967	762,004	7,217,996

* MISCELLANEOUS NUMBERS INCLUDE THOSE IN THE 877 SERVICE MANAGEMENT SYSTEM MAINTAINED BY DATA SERVICE MANAGEMENT INC., AND CATEGORIZED AS RESERVED, ASSIGNED BUT NOT YET ACTIVATED, RECENTLY DISCONNECTED, OR SUSPENDED.

APPENDIX

The information in this report and, in many cases, more detailed information can be downloaded from the FCC-State Link internet site at <http://www.fcc.gov/ccb/stats> on the World Wide Web. The report can also be downloaded from the FCC-State Link electronic bulletin board by calling 202-418-0241.

Printed copies of statistical reports are available for reference in the Common Carrier Bureau's Public Reference Room (Room 575 at 2000 M Street, N.W.) and from the Commission's duplicating contractor (International Transcription Services, Inc. (ITS), 202-857-3800).

Additional information on regulated carriers, including investments, revenues, expenses, and earnings, is contained in the annual Statistics of Communications Common Carriers, available from the U.S. Government Printing Office (202-512-1800). Preliminary Statistics of Communications Common Carriers for 1997 can be found on the FCC-State Link.

The names, addresses and telephone numbers for companies in the telephone industry are published in the Industry Analysis Division's Carrier Locator which can be downloaded from the FCC-State Link.

The information on cellular telephone service shown in Tables 2.1 and 2.2 was prepared from data received from the Cellular Telecommunications Industry Association, CTIA, (1133 21st Street N.W., Washington, D.C. 20036, 202-785-0081). They can be found on the internet at <http://www.wow-com.com> on the World Wide Web.

The information on consumer expenditures (Table 4.1), employment (Tables 5.1 and 5.2), and price indexes (Tables 12.1 - 12.3) comes from the Bureau of Labor Statistics and can be found on the internet at <http://stats.bls.gov/blshome.htm> on the World Wide Web.

FCC rules require carriers to provide more detailed traffic data about international telephone service than about domestic service. Because of delays in international settlements, such information is typically received by the commission much later than domestic data and is usually published separately. Tables 7.1 - 7.5 contain summary information on international telephone service. More detailed international data are available from International Telecommunications Data and Trends in the International Telecommunications Industry, both of which are published by the Industry Analysis Division.

Table 9.1 on carrier identification codes and Table 20.1 on area codes come from the North American Numbering Plan Administration (NANPA), which is part of Lockheed Martin IMS. Additional information on NANPA can be found on the internet at <http://www.nanpa.com> on the World Wide Web.

Table 13.3 shows average monthly local rates of RUS Borrowers. Further information on rural telephone companies can be obtained from the Rural Utilities Service, U.S. Department of Agriculture. They can be found on the internet at <http://www.usda.gov/rus/> on the World Wide Web.

PNR and Associates, Inc. (PNR) has donated databases containing information on residential phone usage to the Commission. PNR has granted the Commission permission to use these databases for research purposes and to publish the results. The 1995 survey is known as Bill Harvesting II and the 1996 survey, Bill Harvesting III. The expanded 1997 survey, which contains over twice as many observations, was conducted by both PNR and Associates, Inc. and by Market Facts, Inc. and is known as TLC MarketShare Monitor. Tables 15.1- 15.6 come from these databases. For additional information, PNR and Associates, Inc. can be contacted by phone at (215) 886-9200, and by e-mail at info@pnr.com. Their address is 101 Greenwood Avenue, Suite 502, Jenkinstown, PA 19046.

Table 19.1 contains lines from The United States Telephone Association (USTA). USTA represents virtually all local telephone companies (1401 H Street N.W., Washington D.C. 20005, 202-326-7300). Like many trade associations, it collects information from each of its members. Annually, it publishes and sells statistical publications such as Statistics of the Local Exchange Carriers. They can be found on the internet at <http://www.usta.org> on the World Wide Web.

For more information on the following subjects, the following individuals may be contacted at 202-418-0940:

Access Charges	Jim Zolnierek
Complaints	Craig Stroup
Consumer Expenditures	Tracy Waldon
Employment	Jim Zolnierek
Equal Access	Jim Eisner
International Statistics	Linda Blake or Jim Lande
Lines	Alex Belinfante or Jim Eisner
Local Competition	Ellen Burton
Market Shares	Jim Zolnierek or Katie Rangos
Minutes	Alex Belinfante or Adrienne Brent
Prices and Rates	Tracy Waldon
Rate of Return	Katie Rangos
Residential Telephone Usage	Jim Eisner
Subscribership and Penetration	Alexander Belinfante
Technology	Jonathan Kraushaar
Telecommunications Relay Fund Worksheets	Jim Lande or Katie Rangos